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THE ENGLISH JOURNAL OF EDUCATION:

SPECIALLY DESIGNED AS A

Medium of Correspondence

AMONG THE

HEADS OF TRAINING COLLEGES, PAROCHIAL CLERGYMEN, AND ALL
PROMOTERS OF SOUND EDUCATION, PARENTS, SPONSORS,
SCHOOLMASTERS, PUPIL TEACHERS, SUNDAY-
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BELGIUM AND ITS SCHOOLS.

TO THE EDITOR OF "THE ENGLISH JOURNAL OF EDUCATION."

SIR,—There is scarcely an English tourist to whom the name of Belgium is not familiar. He has been accustomed to make it the highway to Germany and Italy. The great national railroad, which is to Belgium what the river St. Lawrence is to Canada, has brought before his eyes every one of its cities in succession. He knows the outline of Antwerp cathedral tower. He is as familiar with the façades of Brussels as with those of London; and could probably draw from memory a more spirited sketch of LES HALLES at Bruges, or the HOTEL DE VILLE at Louvain, than of Guildhall or the Mansion-house. He may, perhaps, have paused to wonder, where more perfunctory travellers have hurried on. He may have studied the magnificent house architecture of the middle ages, with which Flanders is enriched; or the various styles of wood-carving in the cathedrals; or the many battle-fields, from Courtray to Waterloo; the prodigality of splendour which dazzles one in the gorgeous groups of Rubens, or the purer grace of Vandyke. He has probably thought of the days when Bruges was the centre of European commerce, a sort of Manchester and Liverpool in one; or later, when the Bourse at Antwerp was crowded with the most opulent merchants of Christendom. Accustomed to historical parallel, he may have mused over the possible decay of the great marts of England. He may have pondered, whether Bristol and Manchester, Glasgow and London, will leave more splendid relics for the admiration of posterity than these cities of the past; whether a traveller, in the twenty-fifth century of the Christian era, will find them still prosperous, or vainly struggling against decline, or already counted among the things that are gone, as we count of Saragossa, Novgorod, and Venice.

But has he gone further in his inquiries and reflections? Has he entered at all into what we may call the PEOPLE OF BELGIUM questions? Has he thought, how does this population get a living? Where and how were they educated? Is there any similarity between their condition, as to language, and that of the Welsh in the counties where the English and Old British tongues struggle for pre-eminence? He sees multitudes of Romish ecclesiastics in grave costume, reminding him of Valladolid and Seville, as though Belgium and Spain were still united; but does he ask, how far these ecclesiastics practically control the education of the people? Is their legitimate influence disowned, or are their claims exaggerated?

I confess that I have been as culpably ignorant as my neighbours concerning these important topics of investigation—a few specimens out of many. But I am determined not to continue so any longer. I will at least *inquire.* We see things in a broader horizon when we stand on the shoulders of our contemporaries. There are many People of England questions, which will be not the less easily solved by those who have made, like Uncle Toby, the march of the Low Countries.

I write from Brussels. That your readers may not be bewildered by too many subjects of discussion, permit me to confine my observations to the state of elementary education.

The schools of Belgium may be divided into three large classes: those in which the languages of Greece and Rome are taught as the principal means of mental discipline and enrichment; those in which prominence is given to science and commerce; and those which are purely elementary. I am not quite sure that you will allow the exact logic of this principle of division, but it will explain what I mean. The elementary schools may be subdivided again into three kinds:—The superior primary schools, occupying much the same relative position as middle or commercial schools in England, or the higher classes of a national school, in which there is a well-trained master;—the primary schools, and the infant schools. There is another point of view in which these schools must be considered. I allude to their relations to the church and the state. Here they divide themselves into three kinds: those that are communal, and, so to speak, almost purely state schools; those that are mixed, as when a school of Christian Brothers receives help from the public purse; and those that are simply church schools,—as, for instance, the schools of the BRETHREN OF THE CHRISTIAN DOCTRINE.

* * * * *

In 1815, the kingdom of the Low Countries was erected as a rampart against France on the north. That was evidently the thought that guided the congress of Vienna; but whether any such feeling of hostility was entertained by the Belgian population is very problematical. The Dutch monarch appeared to these new subjects a strange compound. They said of him, that he loved liberty so much, that he would keep it all to himself; and liberal philosophy so much, that he would give it, and nothing else, to his people. So that he fostered by his policy two implacable enemies in Belgium—the episcopate, to whom his philosophy was a detestable heresy; and the liberals, to whom his despotism was equally intolerable. For some years, the reaction caused by the horrors of the long wars of Napoleon kept these two parties quiet; lassitude, to them, was better than convulsion; but when a new generation arose, that had not personally suffered by revolutionary movements, they began to combine against the king. It was in vain that the political economists urged the national prosperity, caused by the union of seafaring Holland with handicraft Belgium. The original vice of that union was not effaced. The peace of Europe had lasted long enough to admit of the agitation of great social questions; and, as is always the case in times of peace, the moral questions put out of sight those that were merely material.

It was in 1828 that the two parties first formally developed themselves. The liberals professed themselves offended with the inequitable distribution of public honours and appointments. They inveighed against the manifest supremacy of Holland. Belgium, they said, so long the scene of heroic struggles for liberty, so rich in memories of patriotism from the earliest feudal times, must not, and shall not, be any longer the prey of a stranger. The Belgians are a religious people. The men are more constant attendants at church than in any other country of Europe, except Scotland and Holland. Consequently they revere their clergy, and from all one can hear the clergy deserve that reverence. It took a deeper tone, when they appeared as the persecuted champions of the national faith, against Dutch aggression. True or false, an impression was abroad that the king of Holland was bent upon large measures of proselytism. If the liberal party regarded their country as absorbed, the Roman Catholic party deemed their creed endangered. Such were the elements of the coalition against the royal sway of the House of Orange. It was formed of men who hated each other, but they forgot their differences on the neutral ground, where they met to strive for national independence. So that the Belgian Revolution which followed was at once Roman Catholic, Hierarchical, and Liberal. It is necessary to recognise this fact in order to understand the position of public instruction relative to the Church and the State.

For some years the fires destined to consume the coalition of which we have spoken smouldered unseen. The Roman Catholic party helped forward every plan of popular reform. A few liberals suspected that this spirit was subordinate to secret efforts after despotical power; but nothing transpired to strengthen the suspicion. In fact, the state was a novelty; and many intriguers and partisans on both sides were awed into patriotism by the spectacle of the new nationality, which for years had been the object of their ardent hope and prayer. The great network of railroads in the country had opened a new feature to its commerce and manufactures, and men were not inclined to quarrel. Meanwhile, gradually, but certainly, the Roman Catholic church had been gaining power. Large fortunes had been left to the distribution of the bishops. Religious houses for men and women had absorbed vast numbers of the rising generation. The liberal party saw that liberty of instruction meant the supremacy of the hardest worker in that cause; and they feared that they must be discomfited in a strife, where success implies personal sacrifice and self-denial. Such writers as Devaux, Lebeau, and Rogier, had aroused the people against the king of Holland; they prepared now to attack the bishops and clergy. In the year 1839, Belgium was definitively acknowledged by the European powers as a separate sovereignty. The question as to the provinces of Luxembourg and Limburg was decided. There was no exterior controversy to agitate men's minds; and we find a new epoch in the political history of the country opening upon us, in the advent of M. Lebeau to power, and a formal schism between the Roman Catholic and liberal parties in the state.

In this cabinet, M. Charles Rogier was appointed Minister of Public Works; to this office was added that of Public Instruction. The Roman Catholic party began to organize an active opposition to his designs. The Bishop of Liege, a bold and eloquent writer, led the way: he was aided by the brilliant intelligence of Montalabert in France. One party said that the Jesuits controlled the government; the other, that atheism was enshrined in the council-chamber. The liberals declaimed that the Roman Catholic party had discovered in the public liberties the material with which to construct an ecclesiastical despotism; the Roman Catholics retorted, that in the hands of their opponents liberty was a mere cloak for licentiousness. A M. LEHON was especially fierce in his denunciations of the clergy: "Strong in this liberty of instruction," said he, "they seize every avenue to the conscience; by means of the confessional, they reign over the wives and mothers of our country; through them they govern the electors. They refuse absolution to those who read liberal journals, or who vote for the advocates of progress. Youth and infancy have not escaped them, and we see, that, thanks to the liberty of instruction, fathers and mothers will, in spite of us, send their children to be taught religion and morality by the clergy."

(*To be continued.*)

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL.

[We insert this paper, which was not written for publication, because we hope that the simple narrative will convince some who need to be instructed of the great work to be done before the education of the people is effected.—Ed.]

Oct. 29th 1849.—On the way to the school this morning in company with ———, who has been appointed to act as my assistant, we were saluted by women and boys as we went along in a most singular manner. I cannot say that the exclamations and gestures of these people were significant of disapprobation, but rather the reverse; however, their coarse and brutal manners had a most disheartening influence on me. I looked in vain for some manifestation of feeling that would enable me to "thank God and take courage." . . . It was a dismal scene . . . no appearance of thrift or industry . . . nothing but squalid wretchedness and dirt and idleness—the lanes leading to the school were full of men, women, and children; shouting, gossipping, swearing, and laughing, in a most discordant and unnatural manner. The whole population seemed to be on the eve of a great outbreak of some kind or another; ready for anything but work. . . . . . . These lanes are a moral hell. The place and the people beggar description. . . . . . We prepared the school by placing benches in situations for the division of the scholars into four classes, and as they came tumbling and bawling up the stairs, we directed them to seats. Shortly after ten o'clock I spoke to them kindly, and then asked them to join with me in prayer. They knelt and followed me in the Lord's Prayer, with some few exceptions, in a not very improper manner. The decent behaviour to be met with in almost any school could not be expected here. I proceeded to read a collect, but the noise obliged me to stop.

* * * * *

Most of the children can read very well indeed. Some of them can write, and almost all of the first class can say the multiplication table well; they all promise to be expert at figures. In mere schooling they are not behindhand; but in decency of behaviour or in respect for the teacher, or in discipline of any kind, they are totally unparalleled. No school can be possibly worse than this. It were an easy task to get attention from savages; a white man's appearance would ensure him some sort of regard; but here the very appearance of one's coat is to them the badge of class and respectability;—for although they may not know the meaning of the word, they know very well, or at least feel, that we are the representatives of beings with whom they have ever considered themselves at war. This is not theory, but fact.

* * * * *

We were almost stifled several times by half-a-dozen of the neighbours congregating on the stairs and puffing tobacco smoke in volumes into the school. How the lungs of such emaciated youths could work so effectively is to me a mystery. One miserable boy, with scarcely a hair on his head, was somewhat puzzled to get out the letter of the alphabet to which my companion pointed, so he knowingly pulled out his tobacco-box and helped himself to a quid in a grave and veteran-like manner.

Their craving for stimulants is most saddening. Two of the biggest boys were complimented by me on the way in which they did a sum in compound addition. "Give us some coppers for a pint of beer," was the ready response.

* * * * *

In Scripture history I got a series of answers that are above the average in point of information of those which could be obtained in some national schools. But of what use that kind of knowledge can possibly be, unless it is brought to bear on the moral training and conduct of the possessor, I am at a loss to determine. It is a very easy thing to stuff these boys with Scripture history, or with anything indeed which is or can be made interesting; but it is a sad desecration of the subject and a sinful waste of time to give them mere facts. Be the result then what it may, *I shall introduce the Church Catechism and teach them their duty from that.* The system hitherto pursued has been worthless and criminal. If I do not succeed in teaching the catechism properly, I shall at least have the satisfaction that the boys know the words in which the ten commandments are given, and their duty towards God and their neighbour shall be so impressed on their memories that the day may come when these words, perhaps got off by mere rote, may bear good fruit. *A school without a catechism is like a church without a creed.*

* * * * *

I had occasion to punish a boy slightly this morning: he swore and blasphemed most horribly, and rushed from the school. I took little notice of this display, and sat down calmly to hear the class with which I was engaged read the Acts of the Apostles. I was suddenly startled by a large stone passing my ear. If it had struck me on the head, I must have been severely hurt. I got out of the reach of stones thrown through the window, and continued the lesson. Several followed—half-a-dozen at least. He was ready in the court with a brick in his hand, to have his revenge when I came out. With some difficulty I got out of the lane without being obliged to run. . . . . I walked some time in ——— ———, and having thought over the matter, I considered it best to call at the police station, and ask for a convoy. This was readily granted; and followed at a short distance by the policeman, I returned to the school.

Without one exception, these boys are precocious. They require more training than teaching. The great city has been their book, and they have read men as such boys alone can do.

* * * * *

A child began to scream dreadfully. I said to his elder brother, "Pray take out the child." "Child," said he, "he aint no child; he's a man—look at him, for your own satisfaction, gentlemen," (bowing in a droll way to the class).

Several clergymen called in the afternoon, and they had scarcely left when a most distressing scene occurred. Two girls of twelve or thirteen years of age quarrelled, as it would appear, about a remark which one of the clergymen had made concerning a new frock which one of them wore. The first notice I had of this was to see the pair boxing most viciously; before I could get at them, they had hold of each other's hair, and were yelling most fearfully; they fought like furies. ——— took hold of one, and myself the other; but before we could separate them, one had received a severe, and I fear a lasting injury in the eye, and her nose bled profusely. I sent her home, and went again to work; but I had not been quiet for ten minutes, when a fearful outbreak took place. Seven women rushed into the school; the stairs were full besides; and outside, at least fifty women had collected. These were the mothers and friends of the girls who had fought. Having abused me in no measured terms—and if I mistake not, they collared me—they proceeded to fight. ——— remonstrated with one woman, and I with the other; so we stopped their battle. Our boys cheered most tremendously. The women swore and shrieked. Those outside (several men amongst them) responded. Never, surely, was such a noise heard before. I did not believe that human beings resident in this most Christian metropolis, could so behave. . . . . ——— held up his hands, and if he said anything I did not hear. We got our visitors out at last, and we could see they held an important meeting on the subject of their visit in the court below. But not being interested, we shut the windows to exclude the noise, and proceeded with our work. . . . . To compose the children, if possible, I proposed that we should have a little music, and ——— sang very sweetly the first verse of the Evening Hymn. We then invited the children to follow us, and we got through the first line or two very well—but a blackguard youth thought proper to set up on his own account, and he led off a song in this strain :—

"O, Susannah, don't cry for me,
I'm off to Alabama,
With a banjo on my knee!"

I need scarcely add that every boy followed this leader, ay, girls and all, and I could not check them.

* * * * *

After some time I spoke to them very gently and sadly, and having gained attention to some degree, I ventured to close the school with a very short prayer. I did so. Fearful to relate, in the midst of the Lord's Prayer, several shrill cries of "Cat's meat!" and "Mew, mew," added another fact to the history of this school.

So by the help of God we must both work harder. It is a post of honour. It is a forlorn hope.

30th Oct. 1849.—If possible the scholars were more unruly to-day than they were yesterday, but no serious outbreak took place. Before I got out of the locality I managed to empty my pockets, "Give, give," is the cry—I gave a lesson to-day on the duty of labour, and I pointed out the colonies as a good market. This was the first lesson which arrested their attention.

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I had occasion to remark to a poor old woman who looks after the sewing, that I thought the girls were employed more at sampler work than was necessary. She tells me that they will not work cheerfully at anything else. They have no notions of thrift or of useful work. It is difficult to get them to make a shirt. I gave notice that in future I should expect to see more of them making and mending stockings and shirts, and none of them who could not do such work well were to be allowed to waste their time in samplers. I mean to speak on this subject to some lady visitor should one appear, as I am not well-informed, perhaps, in the importance of samplers. I think marking-ink would do the work better, and save time. At least, a shirt ought to be made before it is marked. May God help us! What a solemn charge is this!

All our copy-books have been stolen, and proofs exist that the school is used at night as a sleeping-room. We must get a stronger door to it. I must also get a tub to stand by the pump in the court, and a piece of coarse towelling and soap. My duties must resolve themselves into—

Daily . .
First.—To see the boys and girls well washed and scrubbed.
Secondly.—To try to get prayers said decently.
Thirdly.—To give them a lesson in their duties and privileges, for they have many, and know none.
Fourthly.—Some religious instruction.
Fifthly.—Reading.
Sixthly.—Writing.
Seventhly.—Arithmetic.

31st Oct. 1849.—Great noise, turbulence, and confusion, but no serious outbreak. The rev. the rector called and left without saying anything. A lady visited us this afternoon and waited for some time. I am at a loss to ascertain the motives which induce ladies to visit such a place, unless one is uncharitable enough to attribute them to mere curiosity, or to that morbid feeling, which makes such places as the Old Bailey, or the Chamber of Horrors, in Baker Street, attractive. We should get on much better without visitors. The children are so accustomed to be shown off, that they bristle up for the occasion, and fire their witticisms with more impudence than when no strangers are present. These boys and girls require to be sobered; all exciting influences should be avoided, and therefore I mean, if possible, to discountenance visitors. I gave a lesson this afternoon in geography in presence of some clergymen; I was attempting to get out the fact that we lived on an island called Great Britain. We spoke of England and Scotland and Wales as being countries close to each other. I got out that an island was a portion of land surrounded by water. Then I asked, "What do we live on?"—"On food, when we gets it," was the ready answer.

I bought some calico and asked the girls to make boys' shirts, which may be given away if they are ever finished. The material for three cost 2*s*. 6*d*., just tenpence a piece! The fact is being constantly forced on my notice, that these children are not so deficient in mere religious wordiness, if that is the word, as might be supposed. They have had a great deal of good schooling in a certain sense, or rather much labour has been expended in teaching them to read, write, and cipher well. But I cannot believe that any attention has been bestowed in making this knowledge useful. They are utterly destitute of feeling or propriety; and their technical education, such as it has been, has not made them more civilized or better children. After all, the school must be looked upon as secondary to home teaching. It is apparently worse than useless to expect a man to be made better by merely learning to read and write. Those of our scholars who can do so best are decidedly the most depraved. One boy, who is quite as well schooled as the average number of boys at his age are schooled—(say twelve years of age)—said to me to-day, "Please sir, I'll go down on my knees and say The Lord Jesus Christ and the Fellowship of the Holy Ghost, for a halfpenny." Another, as we went along the lanes from school, called after us, "Glory be to the Father," &c. All this is very monstrous, and I am puzzled to find the cause for such impiety—there must be a cause—and until I can come to some conclusion on the subject I am at a loss to apply a remedy. I have prohibited the use of the words, "Praise the Lord, Hallelujah!" which they were very fond of shouting, and I have resolved to make their religious lessons as impressive as I can. I use the Lord's Prayer only in opening or closing school; and in the lessons generally I have attempted to introduce a sober solemn tone for that flippant, irreverent, thoughtless, gabbling manner to which they are very prone.

We almost shed tears to-day when we pondered over our work.—*Sursum corda!*

1st Nov. 1849.—Wrote to the curate, asking him to get us a tub to be placed near the pump and about the door of the school, &c. Being All Saints Day, we were bothered by many boys from the Romish school in the neighbourhood, as they had a holiday.

2nd Nov. 1849.—More confusion and excitement. Two lady visitors, who sat nearly the whole afternoon, without helping in the least but apparently enjoying the sad spectacle which our debased scholars presented. I am sorry for these ladies, as I cannot allow ourselves to be sport for them at such a sacrifice to the children under our charge. This making of our school a kind of public exhibition is most detrimental to its discipline and progress. It must be stopped. Are these ladies writing a novel? Surely they are not preparing themselves to be present at a public execution!

A boy, D——, called another boy a thief, on which the latter replied by a few cuffs; I separated them, and let the business of the school proceed. The mother of D—— came into the school to retaliate on the boy who had punished her son. I objected to this, and insisted that I would not have interference from without. The woman raged very much, and called me a blackguard. She declared that my bread was at an end; the authorities would turn me out, &c. N.B.—Avoid violent scenes in the school.

5th Nov. 1849.—Scarcely a boy to be found in the lanes, or near the school. They are off picking up pence by the exhibition of effigies, or Guys. Many of these have had a Roman Catholic training. Their fear of the priest seems very trifling. Kept the school open all the morning, and mustered about twenty; might have doubled that number had we admitted all that came, but I declined the honour of the National schoolboys' visits, and politely requested them to enjoy their holiday. Called on Mrs. P———— as the name is pronounced—to ask kindly after her girl, who received the box in the eye last week. Mrs. P——— is a highly respectable, judicious, and God-fearing woman—at least, she says so *herself*. She says that she is well known to the aristocracy, and despises the acquaintance of any one who is not a *lady*. She gave the names of several persons of distinction with whom she is intimate. Mrs. P——— is determined to keep her position, and preserve the fine feelings of her daughter, which have been carefully developed by a course of maternal training. Certainly, her daughter can box very well indeed; and the manner in which she tore her antagonist's hair the other day gives proof that she will keep her place amongst her compeers. Mrs. P——— is not only disposed to be reserved towards her neighbours, and to move in a select circle; she is also very much inclined to be exacting. Kitty B——— is no companion for her daughter, nor is widow ————'s family fit to associate, or even to sit in the same school, with her child. Oh no! Before Miss P——— can return to my seminary, all the children of the families who are obnoxious to Mrs. P——— must be expelled. "Don't the rector know Miss P——? in course he does; didn't he examine her eye? Don't the clargy respect Mrs. P——— and her family; and Mr. P———, who never drinks his beer at the public-house, but has it brought home in his own jug, and drinks of a Sunday like a jintilman? Mrs. P——— is not bigoted, nor is Mr. P———. God forbid. Don't he read the Bible, ay, does he; not like the tight-laced people upstairs, who hate the Bible as the Devil does holy wather." Here Mrs. P——— produced a pocket Bible out of a drawer, in proof of her assertion. According to Mrs. P———, the widow D——— who gave me the scolding on Friday, is a very bad character, and it also appears that the widow was very drunk on Saturday, and got put IN for six hours. What this means I cannot say, unless it be that she was taken to the police station for being disorderly. From another authority—our female assistant—I learn that ———— gave Mrs. D——— five shillings on Friday. . . . The rector and his curates are sadly deceived by these people. I have no pretensions on the score of reading character, but I defy any one who takes the least trouble to observe and compare what he hears from Mrs. P———'s own mouth to remain ignorant of the fact that her family make a very good business out of their respectability. The fight before alluded to was occasioned by some remarks respecting a frock which Miss P——— wore. I was not quite unprepared for this development of Mrs. P———'s character; for, the last time my predecessor visited the school, he said to me when leaving, "I am going to visit Mrs. P———," "Then," answered loudly one of my hopeful children, "he is going to visit a sneak."

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We could not make a school this afternoon; at three o'clock four boys and six girls of the first division alone were present. The attractions outside were overpowering. In addition to the lucrative employment afforded by the carrying about of effigies, or Guys, there were three funerals from the court, which were accompanied by the inhabitants. The deaths were occasioned by black fever, scarlatina, and measles. From what I hear, the locality is very sickly at present—no drainage—no water. Perhaps I should have given a holiday to-day, but I wished to respect the feelings of the Romish population—a wish which they evidently did not understand. In short, they seem to have no feelings; they have fallen so low, that they derive a kind of happiness and independence from their very degradation. "Fears and sorrows," says Campbell, "fan the fire of joy," and this is true in a sense of which he did not dream. It seems as if the excitement caused by an excess of fear and sorrow produced happiness! More of this when I have time. I shall think over the assertion, and I cannot see why it should not be so. "An excess of modesty," said the elder D'Israeli, "is an excess of pride." That paradox will do for a text. Any careful observer would come to another conclusion; and that is, that these people do not require the schoolmaster so much as they need some municipal act for the regulation of lodging-houses and dwelling-houses generally. The Society for Improving the Dwellings of the Lower Classes is one which, if properly supported and carried out, would work wonders. Preaching and teaching can never fructify in the heart or mind of a man who is never *alone*. It is almost cruelty to talk of *virtue* or decency to a being who is doomed to sleep and do everything else in a crowd.

Let any one visit a lodging-house in this neighbourhood and he will never forget it. The woman who live in the room under our school (which has no strong door), tells me that she hears people moving about at night—houseless wanderers, who come there to sleep. They have not as yet stolen anything! It is thus they pay for their lodgings. We did lose some copy-books a short time ago; but I have a notion that they were not stolen, they were taken. I have a notion why.

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Got on very well to-day, but I cannot say that the school improves. The scholars are always out of their element when no strangers are present; and I am glad we had none to-day. Had a conversation with Mr. ———, the district visitor, and having explained, or rather described to him the difficulty we encountered every morning and afternoon in getting the scholars together, and the very great trouble we had to get them OUT *again*, we determined to keep the school open all day, (that is, without having any recess at dinner-time). These people have no regular hours for meals, and our school resembles a club for poor children more than anything else. To-morrow, then, we shall assemble at ten, and keep school till three. The Romish school adopts this plan, and I have no doubt it will be found better than our present mode of breaking up the school from twelve till two.

* * * * *

The children have been sadly neglected. How could it be otherwise? From the system pursued, only two hours a day have been given, practically speaking, to teaching. It takes an hour to get the school together. Then a grand effort was made to swell the numbers present every afternoon between three and four, because the school was usually visited at that hour by the clergy and the curious. It was easy to do this with smart children too, for the Romish school having closed at three, many flocked in to witness, or be parties in the daily exhibition, and to get probably a present of money—a most injurious system this. By keeping the school open between twelve and two, and by closing at three, we may manage to do some good, and only one inconvenience will result from it; not an inconvenience to the teachers or the scholars, but to the ladies who drop in of an afternoon to get (I am grieved to say so) a little amusement after luncheon. Better far that these people should stop at home, or amuse themselves elsewhere.

* * * * *

It is a pity that our slates have no frames; as, apart from the slate when protected by a frame being kept from scratches, frames are useful in other respects. If one happened to be thrown at a person's head—as is sometimes threatened—a framed slate would not be so dangerous. I was threatened with some such thing to-day, and I slightly punished the offender; he contented himself by reserving his revenge for the present, at least he said so, but he dashed his slate on the floor and broke it to pieces, and having indulged in some foul invective—calling me, amongst other things, "a gallows Frenchman,"—he went again sullenly to work. Another told me to-day that the Catholic religion was a b——y sight better than mine. I expended five shillings to-day of my own money in having some black boards put up. This will give us much ease, as the black boards speak well and effectively.

Had fires to-day, which was a source of great attraction. It is cruelty to turn these poor lads out in the middle of the day to shiver in some corner, for their parents are seldom at home until the afternoon. Few of them have a meal in the middle of the day, and that can easily be despatched in five minutes. Henceforward the —— —— school ought to be styled the —— Club House; and why should we not try to civilize them by a sort of club?

An old lady called to ask me to visit her along with my boys, that we might sing over the corpse of her child. She says that she prefers singing very much to "dthrinking,"—and one or the other ceremony she considers as absolutely necessary. I declined—not because I disapproved of her request, for some benefit might have accrued by acceding to it,—but for the very good and unanswerable reason that my pupils were not skilled in singing. I could not ask —— to leave the school class to perform this odd duty. . . I spoke kindly and tenderly to the poor woman, and she left quite pleased with her reception. . . . All our coals were stolen last night. The plan of keeping the school open all day answers remarkably well. When I told the children that it was twelve o'clock, and that those who had their dinners at twelve might go, several moved, but the majority returned in a few minutes; thirty-five of the scholars did not stir: this fact speaks volumes. The Romish clergy understand the natural history of these people better than we do. It is this management that will save our school. They must be allowed to go out and come in when they like. At prayers this afternoon we had better behaviour than usual. I closed the school without any uneasiness, and the boys left in a decent manner. Things are improving. It is the peep of day. We masters had the best of it to-day. I tried to teach the first division of my first class the use of arithmetical signs, and we wrought several questions from the black board in a very methodical and proper manner.

It is a sad thing to turn any one out, but I have reluctantly determined to get rid for the present of three or four of the most unruly boys. . . . I used the cane for the first time to-day, with effect. These children cannot be managed well without some use of it. They do not form attachments readily, and their mode of thinking is the reverse of amiable. What then is to be done? Am I to wait for order until they are capable of appreciating kindness? If so, I must wait a very long time. One other source of influence we have, but I have no heart to use it, although it has been resorted to by my predecessors; that is, to stop the allowance of bread which the rector's bounty awards. This begets a mean, selfish, and beggarly spirit, the very spirit which it is my mission to eradicate. I will not stop their bread. After all that may be said, Solomon was right—a little touch of the cane is the least injurious mode of punishment that can be adopted. It is over at once, and boy and master are not the worse friends for it. Were this a regular, well-appointed school, then my punishments, if needed, would be rare, but severe. Here no system can be adopted. Were I to punish some boy as he deserved, for the advantage of the rest, then my life would not be safe. Every boy, therefore, must stand alone. It is not a school, but a collection of poor ignorant outcasts, and they must be treated accordingly. When I speak of punishments, I would not be considered as using that term in the sense which it bears in a good public school, for anything so severe could not be attempted here. They would rebel at once, and we could not get over the storm. The first man who does his duty in this respect must resign in consequence. They will not be managed by sheer force nor by kindness—a mixture of all kinds of legitimate expedients must be used. A Miss —— called this morning, and seemed to think that we had but a poor school. . . . . . No clergyman has visited us for the three last days.

The school at —— —— has assumed a somewhat different character. I was obliged to expel two of the ——— (a family of gipsy extraction), *Master* ———, and a most troublesome scrofulous boy (for the present), and being rid of them I insisted on order and decency of behaviour—the attempt has been successful. I make this remark without qualification; thank God, a great improvement has taken place. A better proof of this could not be adduced than the fact that the whole school can be kept quiet and attentive at a Bible lesson. Mr. —— gave a lesson this afternoon, which lasted nearly an hour, and the children remained still and orderly throughout. A person of less tact or ability might not be able to do this, but the circumstance is worthy of record. In opening and closing the school, a wonderful change for the better has taken place. The children can now sing the doxology very nicely, and with much propriety of demeanour. They also get through their drill in a creditable manner, and I get perfect order, when necessary, at a given signal. How has all this been accomplished? I cannot boast of the means adopted—they have been frightened into subjection.

Our school now numbers fifty scholars, who attend regularly. I begin to understand something of the natural history of them and their families, and what with the influence acquired over them by somewhat severe discipline I have those fifty under perfect subjection. More than this I cannot say.

SPECIMENS OF PARSING AND PARAPHRASING.

No. XIII.

FROM MILTON'S "SAMSON AGONISTES."

Promise was that I
Should Israel from Philistian yoke deliver;—
Ask for this great deliverer now, and find him
Eyeless in Gaza at the mill with slaves,—
Himself in bonds under Philistian yoke:
Yet stay, let me not rashly call in doubt
Divine prediction; *what,* if all *foretold*
Had been fulfilled but through mine own default?
Whom have I to complain of but *myself,*
Who this high gift of strength *committed* to me,
In what part lodged, how easily *bereft* me,
Under the seal of silence could not *keep,*
But weakly to a woman *must* reveal it,
O'ercome with importunity and tears!—
O, *impotence* of mind in body strong!
But what is strength without a double share
Of wisdom?—Vast, *unwieldy,* burdensome,
Proudly secure, yet liable to fall
By weakest subtleties; not made to rule,
But to subserve where Wisdom bears command.

⁂ Parse the words printed in italics, and write a paraphrase in English prose.

PARSING.

Promise, noun, nom. to *was*.
Eyeless, adj. qual. *him*.
Himself, intensive pers. pron., nom. absolute; *himself being*, &c.
Yet, adv. modif. *stay*; or perhaps an interj.

Stay, verb intrans., imperative, addressing the speaker in the second person.

What, interrog. pron., used as an interject., by abbreviation for "what is to be said?" or "what can I object?"

Foretold, verb, perf. partic. pass.; *all that was foretold.*

Had, aux. verb, past subj., equiv. to *should have.*

Myself, intensive pers. pron., obj. gov. by *of.*

Who, rel. pron., 1st pers., nom. to *could*, agreeing in gend. numb. and pers. with its correl. *myself.*

This, pronominal adj., defining the complex noun *high gift.*

High, adj. qual. *gift.*

Gift, noun, obj. gov. by *keep.*

Committed, perf. partic. pass., describing *gift.*

Bereft, verb, perf. partic. pass., signif. *reft from me.*

Keep, verb infin., trans. governing the noun *gift*, and the two objec. clauses "in what part lodged," and "how easily," &c.

Must, aux. verb, indef. pres., 1st pers. sing. in concord with its nom. *who.*

O'ercome, verb, perf. partic. pass., describing *who.*

Impotence, noun, nomin. exclamatory.

Unwieldy, adj. qualif. *strength.*

PARAPHRASE.

There was promise given by an angel that I should deliver Israel from the yoke of the Philistines;—Ask where is now this great deliverer, and behold him, deprived of sight, grinding at the prison mill with slaves in Gaza,—the predicted deliverer himself being in bonds under the yoke of the Philistines: But let me desist from this upbraiding tone; let me not hastily question the faithfulness of the Divine prediction; for what is to be said, if all that was foretold should have been thoroughly accomplished, had it not been prevented through my own default? Of whom can I justly complain but myself! I who, overcome by a woman's importunity and tears, could not keep concealed in my own mind, but weakly revealed to her, the pre-eminent gift of strength intrusted to me, in what part of my body it lay, and how easily it could be taken from me! O with what a feeble mind this body so strong is united! But what can great strength avail, unless greater wisdom accompany it? Bodily strength is vast, unwieldy, and burdensome, proudly self-confident, yet liable to be overthrown by the weakest artifices; not naturally fitted for supremacy, but designed to serve under the direction and control of wisdom.

GENERAL EXAMINATION OF TRAINING SCHOOLS.

CHRISTMAS, 1849.

I.—LATIN, GREEK, AND FRENCH.

1. TRANSLATE the following into English, and parse the words in Italics, giving the Grammar Rules:—

" Ex his omnibus, longè sunt *humanissimi*, qui Cantium incolunt: *quæ* regio est maritima omnis, neque *multùm* à Gallicâ differunt consuetudine. Interiores plerique frumentum non serunt, sed lacte et carne vivunt pellibusque sunt *vestiti*. Omnes verò se Britanni vitro inficiunt quod cœruleum efficit colorem: atque hoc *horribiliore* sunt in pugnâ adspectu: capilloque sunt promisso, atque omni parte corporis rasâ præter caput et labrum superius.

2. Translate the following into English, and parse the words in Italics, giving the Grammar Rules:—

Est in *secessu* longo locus: insula portum
Efficit objectu laterum, quibus omnis ab alto
Frangitur, inque sinus *scindit* sese unda *reductos*.
Hinc atque hinc vastæ rupes, geminique minantur
In cœlum scopuli: quorum sub vertice late
Æquora tuta silent.—Tum sylvis scena coruscis
Desuper, horrentique atrum nemus imminet umbra.
Fronte sub adversa scopulis pendentibus antrum:
Intus aquæ dulces, vivoque sedilia saxo;
Nympharum domus.—Hic fessas non vincula naves
Ulla tenent, unco non alligat anchora morsu.

VIRGIL.

3. Translate the following into English, and parse the words printed widely:—

* * * * *πᾶς ὁ ἐρχόμενος πρός με καὶ ἀκούων μου τῶν λόγων καὶ ποιῶν αὐτοὺς, ὑποδείξω ὑμῖν τίνι ἐστὶν ὅμοιος. Ὅμοιος ἐστιν ἀνθρώπῳ οἰκοδομοῦντι οἰκίαν, ὃς ἔσκαψε καὶ ἐβάθυνε, καὶ ἔθηκε θεμέλιον ἐπὶ τὴν πέτραν· πλημμύρας δὲ γενομένης, προσέρρηξεν ὁ ποταμὸς τῇ οἰκίᾳ ἐκείνῃ, καὶ οὐκ ἴσχυσε σαλεῦσαι αὐτήν· τεθεμελίωτο γὰρ ἐπὶ τὴν πέτραν. ὁ δὲ ἀκούσας καὶ μὴ ποιήσας ὅμοιος ἐστιν ἀνθρώπῳ οἰκοδομήσαντι οἰκίαν ἐπὶ τὴν γῆν χωρὶς θεμελίου· ᾗ προσέρρηξεν ὁ ποταμὸς, καὶ εὐθέως ἔπεσε καὶ ἐγένετο τὸ ῥῆγμα τῆς οἰκίας ἐκείνης μέγα.*

4. Translate the following into English, and parse the words printed widely:—

" *Κύριε ὁ θεός, ὁ παντοκράτωρ, ὁ τοῦ ἀγαπητοῦ καὶ εὐλογητοῦ παιδός σου Ἰησοῦ Χριστοῦ πατὴρ, δἰ οὗ τὴν περὶ σοῦ ἐπίγνωσιν εἰλήφαμεν, ὁ Θεὸς ἀγγέλων καὶ δυνάμεων, καὶ πάσης τῆς κτίσεως, καὶ παντὸς τοῦ γένους τῶν δικαίων, οἳ ζῶσιν ἐνώπιόν σου· εὐλογῶ σε, ὅτι ἠξίωσάς με τῆς ἡμέρας καί ὥρας ταύτης, τοῦ λαβεῖν μέ μέρος ἐν ἀριθμῷ τῶν μαρτύρων σου, ἐν τῷ ποτηρίῳ τοῦ Χριστοῦ* *σου, εἰς ἀνάστασιν ζωῆς αἰωνίου, ψυχῆς τε καὶ σώματος, ἐν ἀφθαρσίᾳ Πνεύματος ἁγίου· ἐν οἷς τροσδεχθείην ἐνώπιόν σου σήμερον ἐν θυσίᾳ πίονι καὶ προσδεκτῇ, κτθὼς προητοίμασας καὶ προεφανέρωσας καὶ ἐπλήρωσας, ὁ ἀψευδὴς καὶ ἀληθινὸς Θεός. Διὰ τοῦτο καὶ περὶ πάντων αἰνῶ σε, εὐλογῶ σε, δοξάζω σε, σὺν τῷ αἰωνίῳ καὶ ἐπουρανίῳ Ἰησοῦ Χριστῷ ἀγαπητῷ σου παιδί· μεθ' οὗ σοι καὶ Πνεύματι ἁγίῳ ἡ δόξα, καὶ νῦν εἰς τοὺς μέλλοντας αἰῶνας. Ἀμήν."*

5. Translate the following into English, and parse the words printed widely:—

Ω πλοῦτε καὶ τυραννὶ καὶ τέχνη τέχνης
ὑπερφέρουσα τῷ πολυζήλῳ βίῳ,
ὅσος παρ' ὑμῖν ὁ φθόνος φυλάσσεται,
εἰ τῆσδέ γ' ἀρχῆς οὕνεχ', ἣν ἐμοὶ πόλις
δωρητὸν, οὐκ αἰτητὸν, εἰσεχείρισεν,
ταύτης Κρέων ὁ πιστὸς, οὐξ ἀρχῆς φιλος,
λάθρα μ' ὑπελθὼν ἐκβαλεῖν ἱμείρεται,
ὑφεὶς μάγον τοιόνδε μηχανορράφον,
δολιον ἀγύρτην, ὅστις ἐν τοῖς κέρδεσιν
μόνον δέδορκε, τὴν τέχνην δ' ἔφυ τυφλός.

Soph. *Œd. Tyr.*

6. Translate either of the following into English Prose, parsing the words in Italics:—

(1) La reine se *coucha* à deux heures du matin, et s'endormit, *fatiguée* par une journée aussi pénible. Elle avait ordonné à ses ***deux*** femmes de se mettre au lit, pensant toujours qu'il n'y avait rien à craindre, du moins pour cette nuit : mais l'infortunée princesse *dut* la vie au sentiment d'attachement qui les empêcha de lui obéir. Ma sœur, *qui* était l'une de ces deux dames, m'apprit le lendemain tout ce que je vais en citer.

(2) La cigale, ayant chanté
Tout l'été
Se *trouva* fort dépourvue
Quand la bise fut *venue:*
Pas un seul petit morceau
De mouche ou de vermisseau!
Elle alla crier famine
Chex la fourmi sa voisine,
La priant de lui prêter
Quelque grain pour subsister
Jusqu'à la saison nouvelle.
Je vous *paîrai*, *lui* dit elle,
Avant l'août, foi d'animal,
Intérêt et principal.
La fourmi n'est pas preteuse :
C'est là son *moindre* défaut.
Que faisiez-vous au tems chaud
Dit-elle à cette emprunteuse.

Nuit et jour à tout venant
Je chantais, ne vous *déplaise*.
Vous chantiez! J'en suis fort aise.
Hé bien! dansez maintenant.

II.—CHURCH HISTORY AND LITURGY.

SECTION I.

1. Explain the words Common Prayer, Liturgy, Rogation Days Communion of Saints. Why is Trinity Sunday the last great festival in the sacred year?

2. Give an account of the origin of the Book of Common Prayer, and of the changes which it has undergone.

3. To whom are the words, "The Lord be with you," and the words, "And with thy spirit," addressed? from whence are they taken? What are the subjects of the "Te Deum?" Prove from Scripture that Baptism and the Lord's Supper possess the four requisites for a sacrament,

SECTION II.

1. Write out the first article, and prove it from Scripture.

2. Write out the article "of good works," and illustrate it by reference to Scripture.

3. Write out the article "of the one oblation of Christ," and illustrate it by reference to Scripture.

SECTION III.

Write out the article "of Baptism:" mention the principal arguments against infant-baptism, and answer them.

SECTION IV.

1. Give some particulars respecting the British Church prior to the Saxon invasion.

2. Give some account of the most eminent of the fathers in the first two centuries.

3. Give an account of the communion, rites, and discipline of the church in the first two centuries.

SECTION V.

1. State the time and the causes of the schism between the Eastern and Western churches.

2. Give an account of the six Œcumenical synods.

SECTION VI.

Give some account of Wickliffe, Hooker, Ferrar, and Hammond.

III.—GEOGRAPHY AND POPULAR ASTRONOMY.

SECTION I.

1. Explain the terms watershed, basin, right and left bank of a river. Trace the course of the four principal rivers in England.

2. Describe the position and limits of the chief plains in England. What is meant by the Bedford Level?

3. Where are the principal coal-fields in England? Trace the line which bounds the mineral wealth of England on the east. Give a particular account of the county in which you have chiefly resided.

SECTION II.

1. Give an account of the principal watershed of Europe. What rivers drain the northern and southern slopes respectively?

2. Give some particulars of the following places:—Trent, Frankfort, Geneva, Genoa, Nantes, and Hamburgh.

3. Describe the projections chiefly used in maps. Draw a map of Europe, and place in it the Elbe, Rhine, Danube, and their tributaries. Mention the sources of these rivers, the countries through which they flow, the towns situated on their banks, and their respective lengths.

SECTION III.

1. Explain how mountains affect the climate of a country, and state their use in the economy of nature.

2. Describe the principal currents in the ocean, and account for them.

3. State the principal causes which determine the climate of a country, and explain fully how they influence climate.

SECTION IV.

1. Describe the principal table lands in Europe and Asia.

2. Describe the change which takes place in vegetation in receding from the equator towards the poles.

3. Give the characteristics of the varieties in the human race, and mention the parts of the world they severally inhabit. What are the principal families of the Caucasian race, and the countries inhabited by each?

SECTION V.

Give some account of Australia, or of Canada.

SECTION VI.

1. What proofs are there of the globular shape of the earth, and how is it shown by the vibrations of the pendulum that the earth is flattened at the poles.

2. What is meant by parallax? Explain the difference between diurnal and annual parallax.

3. How do you account for the difference between solar and sidereal time?

SECTION VII.

1. What is the cause of the tides? Why are the tides in the Mediterranean scarcely perceptible?

2. Explain the principle by which longitude is determined by means of a chronometer.

3. Explain the phases of the moon, aud the phenomena of the dif-

ferent seasons of the year. Illustrate your explanation of each by a diagram.

SECTION VIII.

1. Why does the moon always present the same face to us? Why do not eclipses occur often, and at regular periods? What is meant by the moon's ascending and descending node?

2. Account for the apparently retrograde motions of the planets.

3. The radius vector of a planet describes areas proportional to the times. Explain this, and illustrate your explanation by a diagram. Why do not planets and comets fall to the sun as they approach their perihelion. Explain this fully.

IV.—ARITHMETIC.

SECTION I.

1. Subtract 356 from 634, and prove every step in the operation.
2. Multiply 34 by 26, and prove each step.
3. Divide 524 by 3, and prove each step.

SECTION II.

1. Construct a sum in one of the first four rules of arithmetic in such a way that the correctness of a boy's answer may be verified by the master without working the sum.

2. Show that $\frac{2}{8}=\frac{6}{24}$, and $\frac{2}{8}+\frac{1}{4}=\frac{1}{2}$.

3. If 11 things cost 15*s.* what will 19 things cost at the same rate? Work this sum without having recourse to any rule of fractions.

SECTION III.

1. How many persons can receive 6*s.* 6*d.* each out of 5*l.* 18*s.* 4*d.*? Work this sum by division.

2. If 7 men earn 3*l.* 10*s.* in 3 months, what does each man earn per week?

3. If 4 casks of raisins at 3*l.* 10*s.* per cwt. cost 21*l.*, what is the weight of a cask?

4. A hosier sells 90 pairs of stockings and gloves for 12*l.* 10*s.*; the stockings at 3*s.* and the gloves at 2*s.* 6*d.* per pair. Required the number of each.

SECTION IV.

1. What fraction is 8*s.* 2*d.* of a guinea?
2. Reduce $\frac{3}{7}$ of 1*s.* 5½*d.* to the fraction of half-a-crown.
3. Reduce $\frac{1-\frac{1}{2}+\frac{1}{3}-\frac{1}{4}}{1+\frac{1}{2}-\frac{1}{3}-\frac{1}{4}}$ to a simple fraction.
4. If A. can do a piece of work in 10 days, and A. and B. together can do it in 7, in what time can B. do it alone?

SECTION V.

1. Find the value of ·3125 of a guinea.

2. How many French metres 39·371 inches long are there in a mile?

3. Reduce the circulating decimal ·2083′ to its equivalent vulgar fraction.

4. Find the value of $\frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ to four places of decimals.

SECTION VI.

1. Find by the rule of practice the value of 2754½ things at 1*l.* 6*s.* 1*d.* each.

2. Find by the rule of practice the value of 29 cwt. 2 qr. 14 lb. at 4*l.* 16*s.* 8*d.* per cwt.

3. What is the value of 210 yards of linen at 11½*d.* per yard, allowing 21 yards to the score?

4. If 10 men can do a piece of work in 5¼ days in summer, when they can work 13 hours a day, how long will it take 9 men to do it in winter, when they can only work 9 hours a day?

SECTION VII.

1. In what time will 188*l.* 6*s.* 8*d.* amount to 192*l.* 2*s.*, at 5 per cent., simple interest?

2. What must an article which cost 11*s.* 8*d.* be sold for to produce a gain of 20 per cent.?

3. A pound of mould candles costs 8*d.* and contains 6 candles; a pound of dipt candles costs 6½*d.* and contains 10 candles; a mould will burn 6 hours, and a dipt 3 hours; which are the cheapest, moulds or dipts?

4. A hat which cost 9*s.* will last 7 months, and one which cost 11*s.* will last 13 months; which is the cheaper? What would be saved in 20 years by wearing the cheaper kind of hat rather than the other, allowing simple interest at 5 per cent.?

SECTION VIII.

Give rules for the following operations of mental arithmetic, and prove them.

1. To find the price of a cwt., knowing the price of a pound.

2. To find the price of 100 articles, knowing the price of one.

3. To find the interest of any number of pounds for a given number of *months*, at 5 per cent.

4. To find the interest of any number of pounds for any number of *days*, at 5 per cent.

V.—MUSIC.

SECTION I.

1. Describe the method you consider best adapted for teaching music in a primary school.

2. Write a short essay upon the *uses* to which music may be properly applied in education.

SECTION II.

1. Describe the respective character of the diatonic and chromatic scales, and point out the peculiarities of the major and minor modes.

2. Give the proper signatures to the following keys:—C minor, A major, G minor, F♯ major, E♭ minor, A♭ major, B minor, and E major.

3. Write a brief description of the different kinds of *time* employed in music, and give illustrations of the most common.

SECTION III.

1. Explain the exact meaning of the following musical terms:—adagio, andante, andantino, allegretto, allegro, calando, crescendo, legato, morendo.

2. Write from memory short passages of music illustrative of any of the above terms.

2. Explain the principal chords employed in music, and write them down in different positions.

SECTION IV.

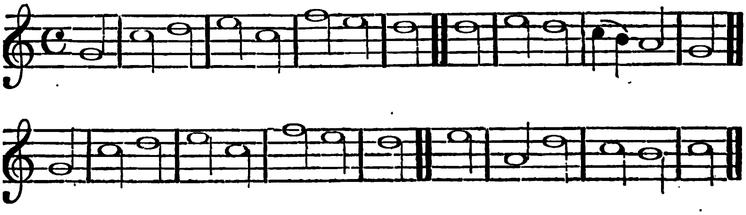
1. What is meant by modulation, and by what means is it effected?

2. What are the faults most necessary to be avoided in writing harmony? Give illustrations.

3. Compose a short passage of music in full harmony, and describe the manner in which it may be written in the figured notation.

SECTION V.

Write a figured bass to the following air:—



VI.—INDUSTRIAL MECHANICS.

SECTION I.

1. How many bushels of coals must be expended in a day of 24 hours, in raising 150 cubic feet of water per minute, from a depth of 100 fathoms, the duty of the engine being 60 millions?

2. The piston of an engine is 3 feet in diameter, the length of the stroke is 6 feet, and 6 strokes are made per minute; under what effective pressure must the engine work, that it may yield 75 horse power on the piston?

3. Steam is admitted into the cylinder of an engine whose stroke is 10 feet, at a pressure of 34 lbs. per square inch, and cut off at one-fourth the stroke; how many units of work will it do per stroke on each square inch of the piston?

Section II.

1. State the principle of the equality of moments, and prove it in the case of two pressures acting perpendicularly to the arm of a straight lever.

2. Show that the centre of gravity of a plane triangle is situated at two-thirds the distance from either angle to the bisection of the opposite side.

3. Show how the centre of gravity of any number of heavy bodies, whose respective centres of gravity do not lie in the same plane, may be determined.

4. Prove the principle of the parallelogram of pressures in the case in which the pressures are commensurable.

Section III.

1. Investigate an expression, or the space through which a body falls freely, by the action of gravity, in a given number of seconds.

2. Show that the amount of *work* which a body moving with a given velocity is capable of yielding, by reason of its momentum, is represented by half its *vis viva*.

3. The work of a pressure, whose direction remains parallel to itself but is not that in which its point of application is made to move, is measured by the product of the pressure, into the projection upon the direction of the pressure, of the space through which the point of application is moved.

4. Show that the additional velocity (f) per second (accelerating force) communicated by the constant action of giving pressure P to a body whose weight is W, is represented by the formula—

$$f = \frac{P}{W} g$$

Section IV.

1. A rod 16 feet long is of uniform thickness and weighs 13 lbs. A weight of 25 lbs. is suspended from one extremity, and one of 9 lbs. from the other, on what point will it balance?

2. A stone is let fall from the top of a tower, and t seconds afterwards another stone is let fall from a window a feet below it; when and where will one stone overtake the other?

3. A train weighing W tons is impelled along a horizontal line by a a constant pressure of P lbs., what space will it have described in the first t seconds of its motion, the resistance of the rail being estimated at m lbs. per ton?

4. There is a sluice a feet high and b feet wide, situated at c feet from the top of a flood-gate; what is the pressure on this sluice when the water reaches the top of the flood-gate, and where must a single pressure be applied to sustain it?

VII.—MENSURATION.

Section I.

1. Investigate a rule for finding the area of a trapezoid.

2. Show that the area of a circle is equal to the rectangle contained by the circumference and half the radius.

3. Show that the volume of a pyramid is equal to the third part of that of a prism of the same base and altitude.

4. Investigate a general expression for the solidity of a rectangular prismoid.

SECTION II.

1. Describe and explain the diagonal scale.
2. Describe and explain the vernier.
3. Describe and explain the theodolite and its adjustments.

SECTION III.

1. Draw a plan and find the area of a field from the following notes:

	370 to A
110	220
	from C to R
	280 to C
	from B to R
	470 to B
	from A

2. What is the area of a circular table whose diameter is 5 feet 8 inches?

3. Estimate the cost of a standard rod of brickwork under the following circumstances:—The bricks cost 40*s.* per thousand at the kiln, and 10*d.* per ton cartage; a superficial foot of brickwork, standard thickness, weighs 120 lbs.; two bricklayers with three labourers can build half a rod per day; a bricklayer earns 4*s.* per day, and a labourer 3*s.*, and the mortar costs 5*s.* per rod.

4. The equidistant diameters of a cask taken at 12 inches apart are as follows, 50, 60, 70, 60, 54 inches. What is its contents in imperial gallons?

SECTION IV.

1. What is the length of a cord which will describe a circle containing $\frac{3}{8}$ of an acre?

2. Required the side of the equilateral triangle described in a circle whose diameter is 4.

3. A box and its cover are to be made with 54 superficial inches of tin. It is required to find its content first when it is a cube, and secondly when the sides of the base are 6 inches and 3 inches respectively.

Correspondence.

(The Editor begs to state distinctly that he is not answerable for the opinions of his Correspondents.)

LESSONS AND EXPERIMENTS PROPER FOR WINTER.

SIR,—The diligent schoolmaster will avail himself of the present season to make a series of little experiments, which can only be successfully presented to the children during winter. Does he wish to teach them that the different degrees in which bodies absorb heat depends much upon colour? He will repeat the celebrated experiment of Dr. Franklin; and getting some pieces of cloth, of different colours from the village tailor, he will place them upon snow in the presence of his scholars, and see under which the snow melts most quickly. He will then ask, which is the warmer for winter—a black coat or a white one? A black hat or a white one? &c., &c.

Again, he will ask, what is snow? Rain, snow, and hail are formed by the precipitation of vapour, when two bodies of air of different temperatures, and saturated with moisture, become mixed together; the nature of the precipitation depending on the temperature of the region of the atmosphere, through which the watery particles come down to the ground. Now, when these particles are frozen in separate crystals of ice, and these afterwards unite together in such a manner as to reflect light to the eye in great abundance from all, thus producing a sensation of whiteness, this assemblage of crystals constitutes snow. Why does it float about in the atmosphere? Because the surface of the flakes is great when compared with their volume. Compare a piece of thin paper, placed over a stove; a boy's paper balloon, when it is balanced by a cork, and gets into a draught of air.

Different shapes of snow. Starlike shapes, cylinders, &c., said to be dependent on the electricity of the atmosphere. There are often animalculæ in snow. One gentleman put a quantity of fresh snow into cold water of great purity, in which the microscope showed no life, and immediately the water was filled with myriads of animalcules, like shrimps, jumping about. Snow-water is bad to drink. Diseases of the throat in Switzerland come from the use of snow-water. Travellers crossing the Alps are warned by the guides not to suck it, or to carry it in their hands. Why not to carry it in their hands? Sometimes snow is of a red colour. Why? The botanist says that he can trace a fungus in it. The chemist says, that when he has analyzed it, he finds in it *peroxide of iron*, silicious matter, alumina and lime. The zoologist refers it to the presence of an insect, perhaps something like that which makes the banks of some rivers, when the tide has retired, red, as if bloody.

The uses of snow—brought from the mountains in hot climates to cool drinks—keeps the earth warm in winter—refrigerates the winds which pass over it—why north-west wind is so cold in Canada—forests keep the snow from melting.

Passages in the Holy Bible which speak of snow. Lepers said to be white as snow—Miriam and Gehazi—Benaiah slew a lion in a pit in the time of snow. Job compares false friends to the turbid torrents which, in Arabia, rush down the hills when the snows are melting, and gratify the thirsty traveller, but soon dry up and disappear; Job vi. 15—17. Rosenmuller tells us that snow-water was thought to possess greater cleansing properties than most other water; compare Job ix. 30. "WHITE AS SNOW IN SALMON;" what does this mean? Psa lxviii. 14. "When the all-powerful God dispersed hostile kings on your account, ye became as splendid and conspicuous as the bright snow on the lofty hill of Salmon,"—"snow like wool"—hoar-frost, congealed or frozen dew.

Such are some of the topics to which I have called the attention of the children of my school in December, and I trust they will be suggestive in their way to other teachers in January.

I am, Sir, your constant reader,

D.

DEATH OF THE QUEEN DOWAGER.

SIR,—It has pleased Almighty God, of His great mercy, to take to Himself the soul of Her Most Gracious Majesty, Adelaide, the Queen Dowager. She has died full of honour, and a weeping nation has accompanied her to her tomb. At such a time, I trust I am not out of place in suggesting, through the pages of your excellent periodical, that every church schoolmaster should take some early opportunity of giving a lesson to the children intrusted to his care on her late Majesty's life and character; and in days when loyalty is regarded by many as an almost exploded obligation, such a lesson ought to be accompanied by a strong inculcation of the reverence due to Her Most Sacred Majesty, Victoria the First.

I am, Sir, your obedient servant,

A LOYAL SUBJECT.

Notices of Books.

FESTIVAL AND LENTEN LECTURES; DELIVERED AT ST. GEORGE'S CHAPEL, WINDSOR, WITH SPECIAL REFERENCE TO THE ECCLESIASTICAL AND SOCIAL QUESTIONS OF THE DAY, IN 1848-9, BY THE REV. C. J., ABRAHAM, B.D., FELLOW OF KING'S COLLEGE, CAMBRIDGE, AND ASSISTANT MASTER OF ETON. (Oxford: *John Henry Parker.*)

THIS volume derives much interest from the fact, that Mr. Abraham, relinquishing all his bright prospects of preferment in England, is about to proceed to New Zealand, and to spend the remainder of his days, as Head of the New College at Auckland founded by the Bishop of that Diocese. His views on education, expressed in the following passage, will be read with advantage by every teacher of youth :—

"We are now to speak of the other point suggested by the collect, (for St. John the Baptist's Day,) the principles of education. As I said just now, St. John the Baptist, standing between the Law and the Gospel, is the very personification of Christian childhood, which requires a certain amount of Jewish strictness and lawgiving, tempered and materially modified by Gospel love and liberty. As experience increases I grow more and more into the conviction, that no Christian education can be carried on without the *two* principles of *fear* and *love* combined, with the latter of course much preponderating; but not exclusive. Time was that all education was carried on by fear alone. It failed of course. A reaction came, and the contrary extreme prevailed. I have no hesitation in saying, as the result of some experience, that it produced a self-indulgent, easy, indolent temper and character; the energy, the alertness, the *hard work* or *self-denial* was lost, because there was no application or use of the element of fear. Schools were in danger of becoming indulgent homes, instead of 'strengthening and annealing' the manlier faculties. Now the collect of the day presents to all engaged in education, whether in schools, or colleges at the University, the duties of their office. They must of course have the same element we spoke of just now as needed for penitentiaries, the element of *loving sympathy.* But of all the qualities most admired and most required in others by the young, perhaps *truthfulness* is the first. By that I do not mean, 'not telling falsehoods,' merely; of course that is hardly to be presumed of Priests, Deacons or any lay educationists; but I mean *openness, frankness,* plainness of speech and act, evenness and regularity of habit, that can be depended upon, as always the same; as when people say, 'they know where to find a man.' Then such a character can boldly rebuke vice, because he will be known to mean what he says, and to say it out of love for the offender's best interests, and not out of temper, or caprice, or lack of sympathy. But the secret of all success will lie in the last words of the collect, for education as for penitentiaries; we must be known to *suffer* patiently for the truth's sake. It must not be a cold external communication between tutor and pupil, all authority on one side, and routine obedience on the other. The pupil must see that the tutor suffers and denies himself for the sake of truth and charity; that he devotes himself to his charge, heart and mind, body and soul. Nothing but this love and self-denial will elevate the character and tone of educational bodies to their true position. As long as either penitentiaries or schools and colleges are seen to be worked for gain, so long will there be a wide gulf between the Matron and the Magdalene, between the teacher and the child or youth."

We also extract the following passage, because it makes honourable mention of some papers which have recently appeared in this Journal :—

"And we may thank God, that, however guilty we are individually of neglect in the necessary duty of private devotion, it is another distinguishing mark of this our country and people, that our early education is domestic, that our *family* ties and privacy are the prevailing principle of our national life. The strength of the Heathen Roman character, was the matronly and domestic education of her sons. And so it is the characteristic of England and Scotland. Hear once more the words of that same Christian statesman and philosopher (M. Guizot), when prescribing remedies for the anarchy of his unhappy country; the first and chiefest he insists on is the riveting and strengthening of the family tie by a religious principle; strangely and distinctly confirming the independent observations of a person* lately sent out by an educational body of our Church, to compare the condition of the lower orders in France, and our own country; who writes, that the one feature which specially struck him abroad was the absence of all family or homelike ties in all ranks of their society. Doubtless then it is one of the wisest acts of policy and patriotism, as well as a much higher duty and privilege of inheritors of the Kingdom of Heaven, that the upper and middle classes of this country have a widely-prevailing practice of *family prayer* night and morning, which I could wish were more extended into the lower orders, and doubtless may become so, as their temporal conveniences and improved residences may permit."

THE PHYSICAL ATLAS OF NATURAL PHENOMENA. BY A. K. JOHNSTON, REDUCED FROM THE IMPERIAL FOLIO EDITION FOR THE USE OF COLLEGES, ETC. Fol. Half-bound. (*Blackwood and Sons.*)

JOHNSTON'S PHYSICAL ATLAS.

WE wish to call the attention of our readers, more formally than in an ordinary notice, to the magnificent atlas which has just been published by Messrs. Blackwood of Edinburgh. The author is Mr. Alexander Keith Johnston, the eminent Scottish geographer. The copy before us belongs to an impression of the work reduced, from the original edition in imperial folio, to a size and a price more suitable for colleges, families, and academies. It contains twenty-four plates, on which the skill of the map engraver may be said to have been exhausted. These may be classed under the heads of Geology, Hydrography, Meteorology, and Natural History. The first comprises the geological structure of the globe, the mountain-chains of Europe and Asia, the mountain-chains of America, illustrations of the glacier systems of the Alps (Mont Blanc), phenomena of volcanic action, and the palæontological and geological map of the British Isles. Under the second (Hydrography) we have a physical chart of the Atlantic Ocean, a physical chart of the Indian Ocean, a physical chart of the Pacific Ocean or Great Sea, tidal chart of the British Seas, the river systems of Europe and Asia, the river systems of America, tidal chart of the world. Under the head of Meteorology, we have Humboldt's system of isothermal lines, geographical distribution of the currents of air, a hyetographic or rain map of the world, and a hyetographic or rain map of Europe. Under the head of Natural History, we find the geographical distribution of plants, of cultivated plants used as food, the geographical distribution of various kinds of animals, an ethnographic map of the world, and an ethnographic map of Great Britain and Ireland. The maps are coloured, and the whole is accompanied by appropriate letter-press.

It is not consistent with the general design of this periodical to introduce elaborate critical reviews of new works. We prefer giving such brief, and to some it may appear perfunctory notices of them, as will enable our readers to form a general idea of their contents. There are, perhaps, some portions of the present magnificent undertaking which we could have wished to see a little expanded, and others a little curtailed, but that opinion does not alter our estimate of its great value. We strongly recommend it to the notice of every lover of geographical research.

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* Journal of Education, January.

AN INTRODUCTION TO THE STUDY OF THE MIND: DESIGNED ESPECIALLY FOR THE SENIOR CLASSES IN SCHOOLS. BY DANIEL BISHOP. (London: *Longmans.*)

THE first quotation of this writer is one from Channing. Judging from the tone of the latter part of the publication, we cannot help fearing that he does not believe in the Incarnation and Atonement of our blessed Redeemer. We sincerely hope that we are mistaken. We cannot recommend the volume to Church schoolmasters.

THE GEORGICS OF VIRGIL. TRANSLATED BY W. H. BATHURST, M. A., RECTOR OF BARWICK-IN-ELMET. (London: *Taylor, Walton, and Maberly.*)

WE venture to affirm that this translation is far superior to that of Dryden. Whether it is in all respects equal to that of Mr. Sotheby is another question.

THE FAMILY ECONOMIST: CONTAINING ORIGINAL ARTICLES BY THE BEST WRITERS ON DOMESTIC ECONOMY, EDUCATION, SANITARY REFORM, COTTAGE GARDENING AND FARMING; ALSO SOCIAL SKETCHES, MORAL TALES, FAMILY SECRETS, AND VALUABLE HOUSEHOLD RECIPES. (London: *Groombridge and Sons.*)

EXCELLENT again! An ample shilling's worth!

EXERCITATIONES IAMBICÆ; OR, ORIGINAL EXERCISES IN GREEK IAMBIC VERSE: CONSISTING OF PASSAGES FROM SCOTTISH AND OTHER POETS, PARAPHRASED AND ARRANGED FOR TRANSLATION INTO GREEK IAMBICS. TO WHICH ARE PREFIXED THE LAWS OF THIS SPECIES OF COMPOSITION, TOGETHER WITH THE MOST ESSENTIAL RULES OF GREEK ACCENTUATION. BY E. R. HUMPHREYS, B. A., FELLOW OF THE EDUCATIONAL INSTITUTE OF SCOTLAND, MEMBER OF THE COUNCIL OF THE COLLEGE OF PRECEPTORS OF ENGLAND, HEAD CLASSICAL MASTER IN MURCHISTON CASTLE ACADEMY. (Edinburgh: *Adam and Charles Black.*)

THERE is much that is very valuable and suggestive in these exercises. They will help the young student in learning to form those paraphrases which are necessary in the earlier stages of learning to write Greek verses. And few occupations are more likely to sharpen the understanding and ripen the taste than that of reproducing the thoughts of English and Scottish genius in the language of ancient Attica.

HISTORY OF GREAT BRITAIN AND IRELAND; WITH AN ACCOUNT OF THE PRESENT STATE AND RESOURCES OF THE UNITED KINGDOM AND ITS COLONIES. BY HENRY WHITE, B. A., TRINITY COLLEGE, CAMBRIDGE; M. A. AND PH. DR. HEIDELBERG; AUTHOR OF "ELEMENTS OF UNIVERSAL HISTORY," ETC. WITH A MAP OF GREAT BRITAIN AND IRELAND. (Edinburgh: *Oliver and Boyd.*)

The writer of this valuable volume has discharged the task which he has undertaken with considerable skill and ability. The peculiarity of his work consists in the fact, that it is a history of Great Britain and Ireland concurrently, and not of England only, or of Scotland and Ireland.

A COLLECTION OF SACRED MUSIC; FOR THE USE OF SCHOOLS. EDITED BY JAMES TILLEARD. (London: *Novello.*)

We cordially recommend this volume to the notice of our readers, as being the work of a painstaking teacher, although, strictly speaking, its musical accuracy in many places may be questioned.

ON THE RESPONSIBILITIES OF EMPLOYERS. (London: *W. Pickering.*)

This thoughtful volume forms part of a series now in course of publication, by an association of gentlemen, whose names have not transpired. They form a school by themselves. We sympathize, with all our hearts, with the views put forward by the anonymous author. We only wish that direct reference was made throughout to the Church of God as the regenerator of mankind.

TEN SCHOOLROOM ADDRESSES. EDITED BY J. P. NORRIS, M.A., FELLOW OF TRINITY COLLEGE, CAMBRIDGE. (Cambridge: *Macmillan.*)

Mr. Norris has just been appointed one of Her Majesty's Inspectors of Schools. Judging by the perfect simplicity and taste which characterize these brief and sensible addresses, the selection has been a most fortunate one.

SUGGESTIONS ON FEMALE EDUCATION: TWO INTRODUCTORY LECTURES ON ENGLISH LITERATURE AND MORAL PHILOSOPHY, DELIVERED IN THE LADIES' COLLEGE, BEDFORD SQUARE. BY A. J. SCOTT, A.M., PROFESSOR OF THE ENGLISH LANGUAGE AND LITERATURE IN UNIVERSITY COLLEGE, LONDON. (London: *Taylor, Walton, and Maberly.*)

We confess that these lectures have disappointed us. We expected from the Professor of the English Language and Literature in University College, London, something more consistent and exact. But, perhaps, a second or third perusal may modify our opinion of the author's capability, for why should critics profess a literary infallibility?

BATTERSEA TRAINING COLLEGE.

ON Monday the annual dinner and commemoration of the foundation of this excellent institution for training a body of pious and efficient Church of England schoolmasters took place, the Right Hon. the Earl of Harrowby in the chair, supported by about eighty gentlemen, who had kindly consented to act as stewards. Amongst them we noticed W. Cotton, Esq., E. Carleton Tufnel, Esq., H. Sykes Thornton, Esq., M.A., F.R.S., the Rev. R. Burgess, Rev. Dr. Mortimer, Rev. Ernest Hawkins, Rev. J. Hunter, Rev. W. B. Smith, Rev. S. Smith, Rev. W. Rogers, Rev. W. Wentworth Bowyer, Rev. Charles Driscoll, and Rev. G. A. Pope, of Tinevelly; Revs. F. D. Maurice, R. E. Copleston, J. R. Nicholl, J. Harris, M. Anderson, W. Whitehead, J. H. Hamilton; Felix Pryor, Esq., H. Founes, Esq., Harry Chester, Esq., P. W. Muxe, Esq., Philip Cazenove, Esq., Henry Smith, Esq., David Power, Esq., Dr. Reid, Dr. Langstaff, the Rev. J. Brown, Rev. Dr. Biber, Captains Holland, Strange, and Moorsom, F. J. Francis, Esq., and several other distinguished friends of education.

The examination for certificates by her Majesty's inspectors of schools having been gone through the previous week, there was a large number of masters present from various parts of the country, besides the resident students, amounting in all to upwards of 150.

After the removal of the cloth, the noble Chairman rose and expressed his gratification at having this opportunity afforded him of meeting so many distinguished friends of education. Although suffering from indisposition at the time, he had travelled 140 miles that day in order to be present. They were met that evening for the purpose of celebrating the anniversary of the Battersea Training College. He thanked his friend, the Rev. the Principal, for calling them together; it was well to call back those young men who had issued from the walls of this institution to the ancient scenes, which would remind them of the time when they were first tutored to the employment in which they were now engaged. Dispersed as they were over the wide surface of the country, under variety of circumstance, in obscure villages, or more frequently among the busy forges, the industry and activity of our large cities and manufacturing towns, surrounded by those in high life, by the sharp-witted and by the sceptic, as well as by the poor and ignorant, it was well that they should return and drink of the old fountain, and meet the friends of the institution, who had come together to show them that their labours were appreciated by the learned, the good, and the wise. When he looked around him, and saw the beautiful drawings, models, &c., which adorned the apartment, most of them the trophies of their own former industry and ingenuity, he could imagine their present feelings and the zest with which they would return to their labours of love. His Lordship concluded by proposing "The Church and the Queen."

The national anthem, by the masters and students.

His Lordship, in proposing the next toast, "The Prince Albert, the Prince of Wales, and the rest of the Royal Family," made special mention of his Royal Highness Prince Albert as being the patron of this institution, which was received with loud applause. But they had been accustomed to include in this toast a name which, alas! they could give no longer; in her the Church and Christian education had lost a kind friend and generous supporter, and therefore it was impossible to revert to her memory without feelings of deep regret.

Drunk in solemn silence.

In proposing "The Army and Navy," the noble Chairman observed that, though such a toast might not be considered by some as quite appropriate, still he thought we had not arrived at that Utopian age when the force of arms could be dispensed with. Sad indeed would it be for England if its army and navy ceased to enjoy the sympathies of their fellow-countrymen.

Captain Strange in acknowledging the toast, observed that he was perfectly satisfied the army and navy did enjoy the sympathies of the nation at large, and he trusted they ever would deserve it. (Applause.)

"Rule Britannia."

The next toast was "Success to the Battersea Training College, and especially the health of the Rev. the Principal," to whose efforts the college, and education generally, owed so much. His Lordship observed that the carrying out of the designs of the institution had involved some great experiments; it was intended to ascertain whether it was possible to give a high tone of mind to men of humble birth, without at the same time lessening their usefulness and injuring their moral and religious character. It had given him great satisfaction to learn that out of the 250 masters trained in the institution, only two had left the profession, and those but for the purpose of entering the higher and more sacred service of the Church. The Battersea Training College had therefore done a great work for the cause of education —a work, indeed, which no other institution in the country is capable of effecting. He might appeal to the Rev. the Principal, to many gentlemen and clergymen present, and, in fact, to all who have had masters from the institution, to bear him out in his opinion that a full development of the faculties of the mind had not depreciated, but, on the contrary, had elevated the moral and religious character of the teacher. Let it never be forgotten that it is not the part of true wisdom, or of true learning, to be puffed up with knowledge—"If any man think he knoweth anything, he knoweth nothing yet as he ought to know." We must remember the proverb which points out learning as proud that she knows so much, and wisdom as humble that she knows so little.

The Rev. the Principal, in reply, said he had not expected his name to be brought so prominently before them, relative to the success of the college, for he was certain that the institution owed less of its success to him personally, than to those kind members of the committee of the National Society, who had carried on the work of this great experiment at an enormous expense, and at a time when its practicability was doubted by many of the friends and patrons of education throughout the country. He must also bear testimony to the indefatigable exertions of his coadjutors, to which they owed an equal measure of their success. As they had given him this opportunity of addressing them, he would take advantage of it to explain to them what the college had already done, and what it was designed to effect. In the first place, they had taken into training adults rather than youths, as at the beginning. He (the Principal) had gone into the manufacturing districts and said to the clergy and congregations, "Pick us out a man who has stood by you in the time of need, labouring in the Lord's vineyard without money and without price—a man who has spent his Sabbaths in the Sunday Schools, and employed himself in collecting the pence of the poor, for depositing in the provident societies, after toiling all day in the murky and unwholesome atmosphere of the mill." These are the men best adapted for carrying out the objects of this institution; for it must be borne in mind, that in effecting the regeneration of the peasantry, the peasant himself must be employed. I have oftentimes found, that though that man was not rich in silver and gold; though he had no wealthy patron, lay or clerical, to recommend him; though he had not in early life been enabled to avail himself of the Government aid held out to pupil teachers, yet in the end that man was a cheap one, though he might cost much in the outset, for he would work hard for the kingdom of Christ, nor would he cease to work until he at the same time ceased to live. But in pursuing this work it was obvious that large means were required to develop this its peculiar feature. He wished them to bear in mind that every contribution to the funds not only went to provide for the general maintenance of the college, but also to bring into training such men as he had described. If they were expected to provide masters with varied attainments, the means must be furnished. It would be amusing to his lordship, and the gentlemen present, to see the correspondence which is pouring in from various parts of the kingdom. Five hundred applications had been made within the last twelve months, by dignified clergymen and others, who must have a man of considerable accomplishments, one who would be able efficiently to teach reading, writing, &c., a little algebra and mechanics; and, as they had introduced chanting into the church, he must lead the choir; and it was also desirable that he be able to play the organ; but, besides this, they had recently heard that great experiments had been made with respect to agricultural chemistry, and he must therefore be acquainted with this science—the great advantage of this being, that the master, by his own accomplishments, might be enabled to support himself. And this strange man is to be raised up in twelve months, or else anxious patrons are wishing to know why we keep the men so long in training. It was impossible for him (the Principal) to fulfil the expectations of the country and his Lordship, without the means—and here he should be ungrateful were he not to remember the liberality of the clergy, who had so kindly consented to aid the institution by sermons in their churches, and also the nobility and gentry, by donations, &c., particularly the noble Chairman, nor forgetting Mr. Cotton and Mr. Cazenove. But, after all, the success of the institution must mainly depend upon the efforts of the masters themselves. A Roman matron was once asked "Where are your jewels?" Pointing to her children, she replied, "These are my jewels." And here the reverend Principal, pointing to the masters, exclaimed, "And here are our jewels, and crown of rejoicing." The rev. gentleman concluded by an affectionate address to the masters, exhorting them to prayerful diligence in training our youth, who are to people our colonies, and be, perhaps, the founders of future dynasties.

W. Cotton, Esq., proposed "The health of their noble Chairman, the zealous promoter of education and the interests of his fellow-men." In the course of his observations he remarked, that if England would be preserved from the anarchy and confusion which had distracted neighbouring states, she must give her children a sound religious education.

H. Sykes Thornton, Esq., M.A., proposed "The health of Mr. Tufnel, and the other Founders of the College." He bore testimony to the efficient working of the institution, and thought that the present Bishop of Melbourne would not regret the use to which his former residence was now applied.

Mr. Tufnel, in returning thanks for the cordial manner in which the last toast had been received, said, that though he had assisted in founding the institution, yet he thought that greater credit was due to those who had carried it forward through the difficulties of the last three years. In conclusion, he begged to suggest that the best way of serving the institution and the country was for gentlemen to select young men fitted by talent and disposition for the office of schoolmaster, and send them here for training.

The Rev. R. Burgess, in a lively and interesting speech, proposed, "The National Society," in the course of which he alluded to the great and lasting benefits which had resulted from its operations. There was only one thing which he could complain of in this society, which was that it did not move quite fast enough for him; he thought they ought to put on a little more steam.

To this the noble Chairman replied, on behalf of the National Society, that he had no doubt that they would put on more steam if the necessary coals were supplied.

The Rev. J. H. Hamilton proposed "The health of the Lords of the Committee of Council on Education."

R. W. Lingen, Esq. (of the Council office), in a brief and able speech, regretted the absence of the Lords, and returned thanks on their behalf.

The Rev. Mr. Hawkins proposed "The missions of the Church of England all over the world," and introduced to the assemblage the Rev. Mr. Pope, of Tinevelly, the distinguished and successful missionary of southern India. The reverend gentleman observed that a schoolmaster in England was half a missionary, and the missionary must be more than half a schoolmaster. It was nearly ten years ago, that he found himself in an uncultivated part of southern India, with about twenty adults and thirteen children committed to his charge. These children were about five or six years of age—they were all naked, very dirty, and unable to read a word in any language whatever. The thought suggested itself to him, How shall I commence my labours in this place? And the reply was, As a schoolmaster. He first taught them to read their own language in a mud hut; numbers were added day by day, until they had increased to 140 boys and young men. He afterwards erected a seminary and collegiate buildings, and when he left Tinevelly sixty of them were learning Greek, and twenty-five could read the Greek Testament well. He concluded by exhorting the masters to cultivate a lively interest in Church of England principles, and her missions abroad; and if, in this and all their work, God should bless them, then all the ends of the world would fear him.

The Chairman, in conclusion, gave "The health of the Rev. the Vice Principal and the Masters of the College, whose valuable services had been so well spoken of by the Rev. the Principal."

Received with deafening applause.

During the evening several glees and madrigals were admirably sung by the students, conducted by Mr. Martin, resident music-master.

The company, after taking tea at an early hour, and joining in the evening divine service of the college, which opened with the Hallelujah chorus, separated, highly gratified with the evening's proceedings.

NEW FORM OF EXAMINATION AT OXFORD.

DEC. 7.—Convocation met this morning to take into consideration the proposed new form of examination statute. Almost all the Heads of Houses were present, the great body of professors and tutors, and about three hundred members of Convocation, among whom were observed Dr. Saunders, Head-master of the Charterhouse School; Dr. Mortimer, of the City of London School; Dr. Hessey, of Merchant Tailors'; Dr. Strange, of Abingdon School; Rev. Mr. Liddell, of Westminster School; Dr. Twiss, Rev. Mr. Denison, of Oriel, &c.

The Convocation-house being found to be inconveniently crowded, an adjournment was made to the theatre.

On the first vote being put, the object of which was to appoint two boards of officers for nominating moderators, Mr. Denison addressed the house in opposition. He objected to various parts of the proposed statute, and in particular to its tendency to depreciate the study of Greek and Latin literature, and to the principle of compensation provided in the ninth vote. Mr. Marriott, of Oriel, also spoke upon this clause, which was rejected by a majority of 36; the numbers being—placets, 133; non-placets, 169.

The second vote concerned the details of the first public examination. Mr. Woolcombe, of Balliol, spoke against the exclusion of Aristotle from all mention in this part of the statute. The vote was carried on a division, but without a scrutiny; the relative numbers being about one to two.

The third vote regulates the distribution of honours in this examination, and was carried by a majority of about four to one.

The fourth vote, which enacts that this part of the statute should come into force in Easter Term, 1852, was carried with scarcely twenty dissentients.

The fifth vote, which establishes a fourth School of Jurisprudence and Modern History, was carried by 153 to 139.

The sixth vote, appointing boards for the admission of candidates to the second public examination, was agreed to without a division.

The seventh vote, arranging for the admission of candidates to the second public examination, was agreed to without a division.

The eighth vote, relating to the matter and form of this the final examination, was opposed by Mr. Buckley, of Brazennose, who pointed out the omission of translation into Latin from among the requirements for candidates for honours. Mr. Hansell, of Magdalen, made some remarks on the introduction of theology into the subjects for the honour examination, and deprecated the too hasty transference of students in arts to the faculty of theology. Mr. Marriott also spoke on this vote in opposition to Mr. Hansell's view. The vote was carried by a majority of 27; the numbers being—placets, 147; non-placets, 120.

The ninth vote, the object of which was to admit to the highest honours candidates eminent in philosophy and history, provided they should have made laudable proficiency in Latin and Greek, and *vice versâ*, was rejected; the numbers being—placets, 92; non-placets, 172.

The tenth vote was to provide for the details of examination in the fourth school—that of jurisprudence and modern history. It was opposed by Mr. Marriott, who feared the introduction of party spirit, and was anxious for better text-books than we at present possess in modern history; whilst, on the subject of jurisprudence, he preferred the study of the canon and civil law to the introduction of the last edition of "Blackstone." Mr. Denison also opposed this vote, which was negatived; the numbers being—placets, 106; non-placets, 178.

The object of the eleventh vote was to provide for the class lists for the final examination; but as the details of the examination in the fourth school had been rejected, the Vice-Chancellor vetoed as much of the present vote as had reference to that school. The remainder of the vote was carried without a scrutiny.

The twelfth vote regulates the payment to the Moderators and Examiners, and was carried with but few dissentients. A scrutiny was demanded by one or two persons, but refused by the Vice-Chancellor.

As the thirteenth vote, which stands somewhat in the place of a preamble, would, if carried, have involved the abrogation of the existing system before any complete plan could be substituted, it was negatived by the Vice-Chancellor.

The statute, in the form to which it has been brought by this day's proceedings, settles the details of the first public examination; and the second, so far as the first three schools are concerned.

The principle of the School of Modern History has been affirmed, but its details have to be reconsidered. Two proposed alterations have been rejected, —viz., that which would take the nomination of examiners from the Vice-chancellor and Proctors, and assign it to certain Boards, and that which would allow a system of compensation between merits and defects. The latter of these propositions is entirely new, while the former is taken, with but slight alteration, from the form of statute which was proposed and rejected in the spring of this year. It is to be observed, that the alterations in the responsions, which were proposed and rejected at the same time, have not been reproduced even in a modified shape. The old statute on this subject will therefore remain unaltered, except by the new arrangements which were then adopted.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

Ques. 48.—*Proposed by H. V. P.*

Bought 4 gallons of rum, of Mr. A., at 18*s.* a gallon, which, by the hydrometer, was found to contain 10 gallons of water in 100 of proof spirits; bought also the same quantity, of Mr. B., at 10*s.* 6*d.* a gallon, which contained 18 gallons of water in 100. Which was cheaper, and how much?

Answered by Mr. John Elliott, Lamesley.

Proof spirit in each gal. of 1st lot $= \frac{10}{11}$ gal.

———————— 2nd lot $= \frac{100}{118}$ gal.

$$\text{Price of proof spirit per gal. of 1st lot} = \frac{18 \times 11}{10} = 19{\cdot}8 \text{ S.}$$

$$\text{———————— 2nd lot} = \frac{10{\cdot}5 \times 118}{100} = 12{\cdot}39 \text{ S.}$$

$\therefore$ 2nd quantity cheaper per gal. of proof spirit by 7 S. $4\frac{3}{4}\,\frac{17}{25}$ D.

Ques. 49.—*Proposed by Cantab, Loughbro'.*

Solve the equation—

$$1 - x = \sqrt{1 - y^2} \quad \ldots (1)$$
$$\sqrt{1 - x^2} = \sqrt{3} - y \quad \ldots (2)$$

Answered by W. P. F., and by Emma Royds.

Squaring (1) and (2), we have

$$1 - 2x + 2x^2 = 1 - y^2,$$
$$1 - x^2 = 3 - 2y\sqrt{3} + y^2.$$

Adding these equations, we have

$$1 - x = 2 - y\sqrt{3}.$$

Hence we have by the first proposed equation,

$$2 - y\sqrt{3} = \sqrt{1 - y^2},$$
$$\therefore 4y^2 - 4y\sqrt{3} + 3 = 0,$$
$$\therefore 2y - \sqrt{3} = 0, \text{ and } y = \frac{\sqrt{3}}{2};$$
$$1 - x = 2 - \frac{\sqrt{3} \times \sqrt{3}}{2}, \therefore x = \tfrac{1}{2}.$$

Ques. 50.—*Proposed by Mr. Herbert, Amberley.*

The sides and diagonal of a rectangle form an arithmetical series, whose sum is equal to one third the area of the rectangle. Required the sides.

Answered by Theta.

Let $x - y$, x, and $x + y$ represent the sides and diagonal respectively; then by the conditions of the question, and the property of the figure, we have the two following equations,

$$\left\{ \begin{array}{c} 3x = \tfrac{1}{3} x (x - y) \\ x^2 + (x - y)^2 = (x + y)^2 \end{array} \right\}$$
$$\therefore 2x^2 - 2xy + y^2 = x^2 + 2xy + y^2,$$
$$\therefore x = 4y,$$

$$\therefore \text{ by subst., } 12y = \tfrac{4}{3}y\,(4y - y),$$
$$\therefore y = 3, \text{ and } x = 12.$$

Hence the sides are 9 and 12 respectively.

List of Mathematical Answers.—Thomas Taylor, jun., Oxford, ans. 48, 49; F. W. Carey, Bristol, ans. 49, 50; W. P. F., ans. 49, 50; I. H., ans. 48, 50; Theta, ans. 48, 49, 50; John Elliott, Lamesley, ans. 48, 49, 50; John Stainrod, Ecclesall, Sheffield, ans. 48, 49, 50; C. Elsee, Henley on Thames, ans. 49, 50; G. Barnacle, Empingham, ans. 49, 50; James Royds, Belfield, Rochdale, ans. 48, 49, 50; George Rule, Whickham, ans. 48, 49, 50; S. Dyer, Battersea College, ans. 50; James Alder, Worsley, ans. 50; B. Whitham, Wolverhampton, ans. 49, 50; James Hill, Bristol, ans. 49, 50; Thomas Wilson, Sebergham, ans. 49, 50; J. W. H., ans. 49, 50; J. Turnbull, Nedderton, ans. 49, 50; J. Percy, Alnwick, ans. 48, 49, 50; R. Keedwell, Bristol, ans. 48, 49, 50; T. Horsman, Chelsea, ans. 50; Kappa, Coupar Angus, ans. 48, 49, 50; T. H. V., Ashford, ans. 48; George Burt, Redditch, ans. 48; Prismoid, Tewkesbury, ans. 49, 50; John Salter, Durham, ans. 49, 50; W. Mitcheson, Newcastle, ans. 48, 49, 50; W. L., Isle of Man, ans. 49, 50; A. Allan, ans. 49, 50; W. T. Haskins, Over Seile, ans. 49, 50; Emma Royds, Hollingworth, ans. 48, 49, 50; M. Bower, ans. 49, 50; J. Reid, Bilston, ans. 49, 50; J. Herbert, Amberley, ans. 49; T. Sothern, Burtonwood, ans. 48, 49, 50; Thomas Rule, Durham, ans. 49, 50; J. Brown, Liverpool, ans. 48; W. R., Ripley, ans. 49, 50; W. M. T., ans. 49, 50; J. Evans, Pembroke Dock, ans. 49, 50; Thomas Whitfield, Bedale, ans. 49, 50; Robert Eyres, Wilton, ans. 48, 49, 50; H. R. J., Farnham, ans. 49, 50; O. Sturges, ans. 49; J. Bond, Bristol, ans. 49, 50; F. R. Crampton, St. John's Wood, ans. 49, 50; J. W. Spedding, ans. 49, 50; — National School, Billericay, ans. 50; W. Wakely, ans. 48; J. P. Milnrow, ans. 48, 50; H. P., Newcastle, ans. 48, 49, 50; J. O. Clazey, Shincliffe, Durham, 49, 50.

NEW QUESTIONS,

To be answered in our Number for February, 1850.

Ques. 51.—*Proposed by Mr. O. Clazey, Durham.*

A person has two vessels, one of which contains 12 gallons of rum, and the other 20 gallons of water: how many gallons must he transfer out of each, so as to render the spirit in each vessel of equal strength.

Ques. 52.—*Proposed by Mr. Elsee, Henley.*

What must be the diameter of a spherical ball, made of copper $\frac{1}{100}$ of an inch thick, so that it may just float in the air, when filled with hydrogen gas.

Ques. 53.—*Proposed by Mr. Tate.*

There are two trees *a* and *b* feet high respectively, and *d* feet apart: what path must a person pursue so that they may always appear of the same magnitude. Determine also the position of the person when the two appear of the greatest magnitude.

Intelligence.

Captain Cook's Memorial School.—Nov. 29, was a joyous, and will be a memorable, day in the parish of Marton, in Cleveland, near Middlesbro', Yorkshire. On that day the foundation-stone of the buildings, to comprise a good schoolroom and a master's house, was laid, with becoming solemnity. A short service was selected by the vicar, the Rev. Harrison Taylor, from "The Book of Common Prayer," a prayer appropriate to the interesting occasion being added. A leaden cylinder, enclosing one of metal, both air-tight, (having within them a plan of the ground and buildings, as well as a list of the subscribers,) and an air-tight leaden box, (containing the current silver and copper coins of the present reign, and a large copper plate, on which was a commemorative inscription,) was deposited by J. B. Rudd, Esq., in a cavity within a large stone immediately beneath the foundation-stone, which was then laid by the Rev. J. A. Park, who afterwards placed *pro formâ* on the foundation-stone the deed by which he gave the site of the buildings, and the garden and ground attached. A printed copy of the inscription on the plate had previously been read aloud by T. T. Trevor, Esq., of Guisbro', the honorary secretary. After the hundredth psalm had been sung, the benediction was feelingly pronounced by the Rev. William Gooch, the rural dean. The mallet used in laying the foundation-stone was formed out of an old oaken beam, removed during the restoration of Marton Church, in the year 1843. Notwithstanding the coldness of the weather, many of the neighbouring clergy and other friends and kind contributors to the institution attended the ceremony and adjourned afterwards to luncheon at the vicarage. The workmen had a dinner provided for them, and Mr. Rudd gave the children a treat at the small old schoolroom. In honour of the great captain, the pride of his native village, naval national flags were hoisted on the groundwork, and the whole proceedings were interesting and well arranged. A drawing of the elevation of the west front of the building was exhibited at the vicarage. It will be an ornament to the village, and attractive to passers-by on the road from Middlesbro' to Stokesley. On account of the approaching winter, the foundations only are in progress, and they will shortly be finished. The contractor for these is Mr. Matthew Bowser, of Stockton-on-Tees. The superstructure will be proceeded with in the spring of next year. Within little more than two years two other important works have been completed in this village:—First, an extension (under the management of J. B. Rudd, Esq., with the advice of Mr. R. C. Carpenter, architect) of the much admired Norman Church, by the addition of a south transept and south aisle and another arch, westward; thereby nearly completing the restoration begun in 1843, and making the church again cruciform in shape, and of the same dimensions which it had in or previous to the year 1630, that date having, at the late restoration, been discovered under the comparatively recent plastering. And secondly a considerable enlargement of the vicarage house, upon a plan furnished by Mr. Cuthbert Brodrick, architect, of Hull. We subjoin a copy of the inscription referred to in our account of the foundation of the school. Happy shall we be to hear of this publication of the late proceedings proving advantageous to the undertaking, by inducing many, hitherto ignorant of the project, to befriend it by their contributions, as the funds at present raised are not sufficient for the due completion of it:—"Train up a child in the way he should go, and when he is old he will not depart from it."—Proverbs xxii. 6. The foundation-stone of a parochial school for ever in this parish of Marton, in Cleveland in Yorkshire, for the general education of children according to the principles of the Church of England, now established, is laid in the year of our Lord and Saviour 1849, and in the 13th year of the reign of Queen Victoria. Thomas Musgrave, D.D., Archbishop of York; Edward Churton, M. A., Archdeacon of Cleveland; William Gooch, M.A., Rural Dean; Harrison Taylor, M.A., Vicar of Marton. This school is erected by public subscription (Rev. J. A. Park giving the site) to perpetuate the memory of Captain James Cook, R.N., who was born in this village of Marton, Oct. 27th, Anno Domini 1728, and performed many eminent public services for the benefit of his country. After twice circumnavigating the globe, and adding many lands to the empire of Great Britain by his discoveries in different parts of the world, he was killed by the natives of Owhyhee, in the South Seas, Anno Domini 1779. Rev. James Allan Park, M.A., of Marton Lodge, Rector of Elwick Hall, and Hon. Canon of Durham Cathedral; the Vicar of Marton (Rev. Harrison Taylor, M.A.) and John Bartholomew Rudd, Esq., of Tolesby, in Marton, barrister-at-law, being the first managers of the school. J. W. Parrington and Watson Dixon being churchwardens; R. C. Carpenter, Esq., of Regent Street, London, architect. "Glory be to thee, O God, alone! Thy way is in the sea and thy paths in the great waters."—Psalm lxxvii. 11.

REPORT OF THE BRADFORD CHURCH OF ENGLAND SCHOOLMASTERS' ASSOCIATION.—On Saturday the 15th of December the half-yearly meeting of this society was held in the Parish Church National Schools. The Rev. Dr. Bromet, vicar, occupied the chair, supported by the clergy of the town, amongst whom we noticed the Rev. W. Morgan, B.D., incumbent of Christ Church, the Rev. N. Cooper, and the Rev. W. Bullock, curate of New Leeds. The officers for the ensuing half-year were appointed, and a proposal for the amalgamation of the society's library with the library of the Church Institution was agreed upon. The schoolmasters and mistresses of the association were admitted as free members of the Church Institution, with the privilege of taking their pupil teachers to hear all the lectures. This was hailed as a great boon; as the lectures given by the clergy to the members of the Church Institution are of an interesting kind, being chiefly on history, geography, church architecture, national philosophy, &c. &c. The lessons for the next course of instruction were appointed in the following order (we name the class-books used by the teachers):—

Rev. Dr. Bromet: English composition: class-book, Cowper's blank verse. Rev. W. Morgan: church history: class-books, Palmer, Churton, Milner. Rev. James Cooper: natural philosophy: class-book, "Matter and Motion" (Chambers). Rev. N. Cooper: Latin: class-books, Odes of Horace, Livy, Lucretius; Latin composition, Arnold and Ellis. Rev. — Bullock: Latin (2nd division): class-books, Eton Latin Grammar, Valpy's Latin Delectus. Rev. J. H. Edmonds: music: class-book, Hullah's Manual. Rev. T. Adams: Geometry: class-book, Dr. Elrington's Euclid. Mr. Rowbottom: English grammar: class-books, Hunter's, Cormon's, and Latham's Grammars. Arithmetic: class-books, Hunter and Tate, De Morgan for the simple rules.

The "Report," which was listened to with great interest by the clergy and all present, set forth the duties of regular attendance, exertion, and faithfulness to the great principles of the Church of England; we extract a few remarks on the state of the classes:—"The composition class is one of great importance to the members, and we have reason to believe that it has been productive of much good. Your committee, therefore, earnestly exhort all the members of that class to regular attendance and to constant practice in that style of composition which the reverend teacher adopts as his model. The lectures on ecclesiastical history and natural philosophy are of great service to this society: these are on subjects rather removed from the everyday employment of a national school, and yet they are required of those who are applicants for certificates of merit. Your committee entertain sanguine hopes of the future prospects of these classes and advise all the members to read standard and authenticated works on these subjects, so as to be enabled to appreciate the lectures. The senior Latin class has made rapid progress in construing and composition under the care of the Rev. H. Cottam, assisted by the voluntary efforts of the Rev. N. Cooper. By a recent minute of this society the pupil teachers were allowed to attend the classes for church history, natural philosophy, Latin, and music. We have great pleasure in bearing testimony to their excellent behaviour, and witness with considerable pleasure the interest they take in learning Latin. This is a hopeful sign, and we do not doubt that the benefits they derive by a study of Latin will enhance their value as teachers of English in our elementary schools. What is usually taught by books called 'Etymologies' (with few exceptions) is often imperfect; the true history of a word will be better seen by a reference to the *original* Latin or Greek root from which it is derived, than by any considerations of an Anglicized substitution. We trust that our youthful assistants will be so grounded in Latin as to enable them to analyze most of the difficult words which occur in the reading lessons in a sound and intelligent manner. The classes for English grammar and arithmetic have been well attended; indeed on no occasion has any member been absent except when compelled by sickness. Your committee beg to speak of these classes as an example to the whole of the society; not only as regards attendance, but in rapid improvement also, which is almost necessarily a result of the former. In the short space of six months several in this class find themselves not only able to perfectly explain the construction of difficult sentences selected from Milton and Young, but also to work with credit questions in the higher rules of arithmetic. Your committee, in the name of the society, beg to return their heartfelt thanks to the Rev. Dr. Bromet, the President of the Society, for his lectures and handsome subscription to the funds for the library; to the Rev. W. Morgan, for his numerous presents of books and tracts; to the Revs. J. Cooper, N. Cooper, H. Cottam, J. H. Edmonds, and T. Adams, for the instruction they have, with so much personal sacrifice, given to the society during the past half-year. And while your committee beg for a continuance of their labours they would, in the most impressive manner, exhort all their brethren to punctuality, industry, and perseverance; with such qualities as these, added to an humble dependance upon Almighty God, they may rest assured, however difficult this task, that success will crown all their efforts."

FREDERIC ROWBOTTOM, *Hon. Sec.*
WILLIAM GARDINER, *Treasurer.*
JOHN HALLOWS, *Librarian.*

It was determined to have a festival of the Society (D. V.) at Easter next when all the members to the number of 50 and upwards will be invited, also the clergy and gentry of the town.

To Correspondents.

A correspondent informs us that the first *Normal School* was established in Paris, in the Hall of the Jacobins' Convent, immediately after the abolition of the Jacobin Club (which met there), by decree of the National Convention; the site is now a poultry market.

BELGIUM AND ITS SCHOOLS.

TO THE EDITOR OF "THE ENGLISH JOURNAL OF EDUCATION."

(*Continued from page* 4.)

THE nomination of M. Rogier to be Minister of Public Instruction was accounted an insult by the Roman Catholic, or Church of Belgium, party. The clergy felt convinced that he and his colleague, M. Lebeau, were determined to make a great effort—not so much to give an impulse to popular education as to make religious instruction of secondary importance. In spite however of their efforts, such had been the shock given to the church by the unnatural development of the conventual system and the exaggerated claims of some ecclesiastical corporations, that the ultra-liberal ministry, on bringing forward their budget, obtained a vote of confidence by a majority of ten voices in the chamber of representatives. The church-party were not disheartened by this defeat: they appealed to the senate, the house of lords of Belgium. The moderation of that body proved to be the safety of their cause. It would have been unbecoming in them to have rejected a budget voted by the house of representatives; but they moved an address to the Crown,. expressing their anxiety concerning the condition of the country. This address was voted by a majority of four, and the ministry retired, having produced a considerable effect on public opinion in all the great towns of the kingdom.

After some vain attempts to reconstruct the cabinet, which were regarded by its most distinguished members as a conspiracy to break up the party which had composed it, M. Nothomb received instructions to form a ministry. It is said, by some, that he took care to place in it no man more able than himself. Its distinguishing characteristic, in the eyes of its enemies, was compromise; in the estimation of its friends, moderation. It would be uninteresting to your readers were I to discuss the various phases which public opinion presented during this period, or the difficult part which King Leopold, a Protestant in religion, and a revolutionist as far as Belgium is concerned, had to play. It is sufficient to state, generally, that the church-party, aided by their indomitable energy and self-denial, have been successful in their plans; that, whatever is the theory of popular instruction, it is practically in the hands of the parish priests; and that a *concordat*, as to the primary normal schools, is carried out—the principal of each being a priest, nominated by the Crown, but really selected by the bishop of the diocese in which the school is situated. The perfect liberty of instruction, guaranteed by the constitution, has been preserved inviolate. No certificates and vexatious licences are required, as in France. These points are generally regarded as having been virtually settled during the ministry of M. Nothomb, a ministry the strength of which lay in its combining the Church and the Moderate parties in Belgian politics.

* * * * *

Dec. 26th. To-day I have had a long conversation with ——, a gentleman who has a perfect knowledge of Belgium; but, as he is an ardent Protestant, it may be presumed that his opinions concerning the political relations of the Church of Rome in that country must be taken with some reservation. He tells me, that the great difficulty of the constitutional government of the country is the independence of the Roman Catholic Hierarchy. According to an arrangement, which, strange to say, dates from the days of Napoleon, all the high clerical functionaries are appointed directly by the Pope. They in turn appoint the curés, &c. So that the government is surrounded by a well-endowed hierarchy, intermeddling, in a thousand subtle ways, with political affairs; yet not at all connected or sympathizing with the state. The consequence is, incessant hostility and heartburnings between the secular and ecclesiastical powers. The secular is sometimes less religious than it would otherwise be, because the ecclesiastical is overreaching. There comes every now and then a crisis, when it is doubtful whether for a time the country should be subjected to a sacerdotal despotism or an infidel ultra-liberalism. A great practical evil results from this state of things: the nationality of Belgium is often imperilled. The heart of the Jesuits is not in Flanders; it is over the hills, in Rome. Belgium may be a province of Holland, or a department of France, or an extension of the Rhenish provinces. What does it matter to them, so that the doctrine of the papal supremacy is maintained, and the immaculate conception of the Blessed Virgin.

* * * * *

Dec. 28th. I visited the CENTRAL SCHOOL OF COMMERCE AND INDUSTRY, under the direction of the communal administration of the city of Brussels. The Chief Director, M. Hancart, obligingly conducted me through the various departments of the establishment. It is a large and handsome building, consisting of a centre and two wings, and stands beyond the barriers of the city, near the end of a noble street, the RUE ROYALE, which may fairly vie with the celebrated CALLE D'ALCALA at Madrid. Those who are acquainted with Clifton and Bristol may imagine the site very well, if they suppose themselves standing in the playground of the Clifton National School, with the Belgian railroad beneath instead of the Bristol river, the hill at Brussels being not so steep as that at Bristol. The class-rooms occupy a range of rooms on the ground floor, alternating with the SALLES D'ETUDES. They are nine in number, and large and lofty, but deficient in warmth and ventilation. Everywhere one encountered a strange fetid smell, as of breathed air, burnt in passing over the ill-constructed stoves. On the first floor is a magnificent chamber, divided by Corinthian columns into three aisles. This is used ordinarily as a dormitory, and contains, with two adjoining apartments, between sixty and seventy beds; but, on grand occasions, it is turned into a saloon, where prizes are distributed. Each bed has a little washhand-stand, but no curtains or boarding separate it from the next. Perfect silence is observed when the pupils are in the room; and a master sleeps at each end of the apartment.

The object of this institution is to prepare the pupils—1. For inland commerce, for foreign commerce and the management of mercantile shipping, bookkeeping,' banking, and manufactures. 2. For the mechanical arts, for chemistry, &c. 3. For the upper military college, for that of military engineering, &c. 4. For the royal navy. 5. For the construction and practical management of railroads.

The educational course is divided into two parts: the former comprehends the preparatory studies; the other, those that are special. To the former is added a purely elementary course for the very young pupils. The upper division again contains two sections: that of commerce, and that of industry. This last includes studies designed to prepare the pupils for the special schools of the government. In the lower division, the purely elementary classes are taught reading, writing, the elements of counting, and those of grammar. The preparatory course of the first year includes the French language, the Flemish language, sacred history, the geography of Belgium, the fundamental principles and operations of arithmetic, writing, and linear drawing. That of the second year, the French and Flemish languages, as before; the English and German languages, general history, general geography and arithmetic, writing and drawing. That of the third year, French, Flemish, English and German, general history and geography, as before; the higher parts of arithmetic, algebra to equations, plane geometry, trigonometry (the fundamental operations), writing, and drawing.

Having gone through this preliminary course, the pupils are regarded as being ready for the higher division of the school.

When the pupil has arrived at this division, he commences the special studies. He chooses one of two sections,—that of industry or commerce. If intended for the former, he continues algebra as far as logarithms and the calculation of interest and annuities. He studies spherical trigonometry, and geometry—spherical, analytical, and descriptive. If designed for commerce, his attention is turned to the calculation of annuities, to exchanges, to the public funds, and bookkeeping. Both sections pursue the study of the French language and literature, general history, and that of Belgium; physics—their general properties, caloric, electricity, and galvanism; inorganic chemistry, with experiments; natural history, botany, and zoology.

In the fifth year, the pupils of the industrial section pursue the study of algebra and analytical geometry; and begin statics and industrial mechanics, topography, land-surveying, planning, &c., and architectural design. They also have a course of much practical advantage, called TECHNOLOGY, or the explanation of the difficult terms used in science. But if a youth is intended for agriculture, he omits the geometry and algebra of this year, and studies in their place the elements of physiology and vegetable anatomy, meteorology, the properties of soils, agricultural chemistry, farming implements, rural architecture, &c., &c.

During the same period, the pupils in the section of commerce learn bookkeeping, partnership accounts, the nature of mercantile companies, &c., the history of commerce—both among the ancients and moderns,—and calligraphy; while those of both sections work at physics, magnetism, optics, organic chemistry with experiments, political economy, industrial and commercial geography, natural history, mineralogy and geology, and commercial legislation.

In the sixth year, the industrial section goes on to the applications of descriptive geometry, physics and chemistry in relation to manufactures, industrial mechanics, constructions, metallurgy and the management of mines, the physiology and health of man, the elements of astronomy, the drawing of machines. But those designed for agriculture omit the course of metallurgy, physics and industrial chemistry, and confine their attention to the study of agriculture.

A complete course of Latin and Greek is given to those pupils whose parents desire it. A card is sent home every quarter to the parents of the pupils, describing fully the progress of their sons. Quarterly examinations are held; and a public exhibition takes place every year.

The time table has nothing that distinguishes it from similar documents. The pupils attend divine service, at the Roman Catholic or Protestant church, as the case may be. There is family prayer in the establishment. The chaplain (of course a Roman Catholic clergyman) is assisted by the director (a layman), in superintending the religious education. Among other duties, he prepares the youths for their "first communion." The pupils are not allowed to leave the grounds, unless accompanied by their parents or friends; or, at stated intervals, in the company of the "MAITRES D'ETUDES."

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Dec. 30. To day I have spent some hours in exploring the great Jesuit College in the RUE DES URSULINES at Brussels. It consists of two vast hotels, the one purchased, and the other erected, by the self-denying efforts of the priests who preside over it. They are twelve in number, and divide among them the varied course of instruction which is given to their pupils; besides eight Bollandists, who are supported by the Belgian government (as I understood), and whose sole duty it is, according to the law of their society, to enrich the lives of the saints of the Romish calendar, with new details, drawn from their own personal investigation.

On entering the door of the establishment devoted to the instruction of the EXTERNES, or Day-scholars, we were shown into a little waiting-room, embellished with the portraits of two Saint-Bishops, each wearing that peculiar aspect in his countenance, which seems to be stereotyped on pictures of the Roman Catholic clergy, and which one wishes to describe by a less offensive word than cunning sanctity. The room was scrupulously neat and clean. By-and-by the Director of the College, LE PERE BOONE, one of the most learned men of Belgium, and one of the most eloquent preachers, entered, to whom I presented a letter of introduction from a gentleman residing in the city. In him one could perceive nothing of the painful appearance which characterizes the portraits to which I have referred. Mild, courteous, and gentlemanlike, without an atom of pretence or assumption, it is not surprising that he gains great influence over his pupils. He accompanied us through the various rooms of the college. On the ground floor is a series of class-rooms and *salles d'études.* Some are appropriated to general studies, such as the classics and modern languages: others are assigned to special studies; for instance, in one was a set of plaster casts, and among them the bust of Mons. Dupuis, of Parisian celebrity; in another, a large black board, ruled for musical exercises; and adjoining it were eight little rooms, with thick walls between them, and in each a capital cottage pianoforte. Every room was handsomely, not to say richly, furnished. The large *salles d'études* (study-rooms) are fitted up with desks of solid oak, and the seats are covered with leather, reminding one of the schoolroom at Radley Hall, near Oxford, but much more splendid, as far as the furniture is concerned. These desks are all placed on the flat floor, and are in single rows, so that the students do not face each other. The characteristic of firmness, solidity, and of *real material*, pervades every department of the institution. At the termination of every passage one meets some emblem designed to illustrate Roman Catholic doctrine or practice: first, a large statue of the Blessed Virgin with the Infant Redeemer, and two candles burning all day long before it; next, a crucifix; next, a picture of some martyrdom, with the most painful circumstances strongly depicted in the foreground. The dining-hall is a handsome apartment, ornamented with copies of pictures of the great masters; among these the Immaculate Conceptions of Murillo were most conspicuous. I could almost have imagined myself in the convents of Seville or the galleries of Madrid. The Jesuit fathers, however, have not given to their college the appearance of a cloister. There is a vast apparatus for gymnastics, in a large room, roofed with glass, and two excellent billiard tables adorn the SALLE devoted to recreation. At the end of the room used for declamation is an ample stage, with side scenes, a proscenium, and drop-curtain; quite as elaborate as those of the little theatre at Blenheim palace. Each establishment has a chapel, with a most delicious organ; and in neither are there any very prominent or offensive features of Romish superstition. There is, for example, only one altar in each, and that not obtrusively decorated with finery. The library in the Hotel of the EXTERNES, or Day-boys, is the humblest chamber of the house in point of decoration, but by far the richest in point of contents. It shows the spirit of the Fathers. If they had but money and opportunity, they would soon rival the Bodleian, or the BIBLIOTHEQUE NATIONALE of Paris itself.

The dormitory is, perhaps, the most complete of the kind I ever saw. It consists of one vast chamber, divided by handsome and solid oak partitions into sixty little bed-rooms, which face each other. Every little bedroom (as at Stonyhurst) contains a narrow couch, most scrupulously and delicately clean, and a washhand-stand and basin, and may be completely closed up by white curtains, which hang from an ornamental frontal of oak, and when I saw them were folded and festooned on each side, in the French manner, so as to give a most charming effect to the whole apartment. Down the centre of the room runs a long wooden construction, consisting of a series of well carved cupboards or wardrobes, of the same height as the dormitories, and completely separating the two lines of them. Each cupboard opens with two doors: the one half contains the coats, shoes, &c., of the pupils; the other, divided into shelves and drawers, his linen. In the middle of these bedrooms is one somewhat larger than the rest, in which a master sleeps.

It is not otherwise distinguished from those around it. The space over the wooden partitions to the ceiling is ten feet at the least, so that there is not any want of ventilation. In all my educational travels I have never seen a series of buildings more beautifully adapted to their use than this Jesuit College of the RUE DES URSULINES. It is the more important, both morally and politically, as being so near to the French frontier. The Jesuits, virtually driven from that country by the laws which control public instruction, can here educate the French youth, and propagate Anti-Gallican opinions. I could not help reflecting,—Oh that the men who have founded this college with such living earnestness, such boundless zeal and perseverance, could be detached from the peculiarities, I had almost said, the abominations of Jesuitism. What an occasion of deep sorrow to every Christian mind, that men so wise, so prudent, so self-denying, should carry a lie in their right hands!

"These Jesuits," said an eminent Protestant gentleman to me, "have a great and true principle at the foundation of their system of education—the principle of religion; but they spoil all by teaching, not only the distinctive doctrines of the Church of Rome, but the detestable maxims of their own casuists. They not only talk of faith while they tax your credulity, but of duty and obedience while they permit you to lie and to murder. Their pupils often learn to contradict in age the system which has outraged their reason and their conscience in youth. They become the champions of infidelity and revolution. Voltaire was educated at the college of LOUIS LE GRAND, then under the exclusive direction of the Jesuits. The same had been the early career, if I remember rightly, of Robespierre, the cost of whose education at Paris was defrayed by the Bishop of Arras." And then, after some moments of silent reflection, remembering the ruin of his own family during the first French Revolution, he added,—"What, in the order of Divine Providence, is to be the eventual fate of the continent of Europe? Religion is being gradually detached from education, both public and private, both of the rich and the poor. Chivalry, with its bright spirit of subordination and honour, is gone; feudalism gone; —what remains as the great instrument of civil government and the security for social tranquillity? Public opinion?" . . . "Why do you ask?" added another; "by-and-by we shall see. Probably, as far as France, Germany, and Italy are concerned, BRUTE FORCE." Such are the almost invariable reflections of thoughtful men, wherever one meets with them abroad. I have conversed with Girondists at Bordeaux, with Parisians, with Austrians at Vienna, with Prussians at Berlin, and always one hears the same sentiment, in the same words, THE MILITARY—THE MILITARY! "LE TEMS PRESENT EST GROS DE L'AVENIR."

GEOGRAPHY OF PALESTINE.

No. IV.

(*Continued from page* 425, *Vol. VII.*)

The territory of the tribe of Naphtali lay eastward from Asher, and northward from Zebulon. Of the latter tribe Jacob had said, " Zebulon shall dwell at the haven of the sea," *i. e.*, of the Sea of Galilee; and concerning Naphtali, which occupied one of the most fertile portions of Upper Galilee, the words of Jacob, according to their best approved rendering, gave the figurative description of " a spreading terebinth, sending forth goodly branches." The fertility of the lot of Naphtali may also have been referred to in that exclamation of Moses, " O Naphtali, satisfied with favour, and full with the blessing of the Lord;" but these words may perhaps be regarded as having some reference to the times, when the darkness around Zebulon and Naphtali was dispelled by the presence and preaching of the Son of God. At all events, the most interesting scriptural topography of these territories has reference to the days of the Incarnation, when Cana and Nazareth in the tribe of Zebulon, and Capernaum, Chorazin, Bethsaida, Magdala and Tiberias, on the borders of Zebulon and Naphtali, became distinguished as scenes of the public ministry of Jesus. We may, however, just advert to the more ancient towns—Kedesh, Hazor, and Harosheth, in the region of Naphtali, as being associated with the history of Sisera, captain of the host of Jabin, king of Canaan, and of Deborah and Barak, who delivered Israel from that monarch's long-endured oppression. At Kedesh-Naphtali, one of the forty Levitical cities, and of the six cities of refuge, Barak, prompted by Deborah the prophetess, assembled ten thousand men of Zebulon and Naphtali, to go forth against Sisera. Hazor, a seat of Canaanitish sovereignty in Jabin's time, was then won for the tribe of Naphtali; and at Harosheth of the Gentiles, another city in Jabin's dominions, the pursued monarch was entirely defeated.

Of the more modern towns which we have mentioned as pertaining to Zebulon and Naphtali, the greater number lay on the western coast of the Sea of Galilee.

Capernaum, one of them, was probably in the north of that triangular plain, between the mountains and the lake, called the land of Genesareth. After the commencement of our Lord's public ministry, Capernaum was most frequently his residence. There, in the house of Simon Peter, the mysterious virgin-born humanity of Jesus found sustenance and shelter. And cruel as we may deem the ravages of time, that have crumbled into dust that home, beneath whose roof the mighty prophet of Galilee was so long a guest and a benefactor,—yet Capernaum, so distinguished above all other localities of Palestine by the frequent manifestation of Christ's glory through mighty works, that it was said to be exalted unto heaven, was by the rejected Messiah doomed to a desolation correspondent to its abuse of privileges; and so strictly have the words of prophetic wrath been verified, that no Scripture topographer has satisfactorily indicated to us a fragment of Capernaum's ancient structures. The scene where the centurion's servant and the nobleman's son were rescued from impending death, appears to have been itself sepulchred, rather than worn away or demolished. Dead as it was in its unrighteousness, it seems as if Heaven's mandate concerning it had been, "Bury the dead out of my sight."

We are similarly unassured respecting the precise sites of Chorazin and Bethsaida, two other towns on the western shore of the lake, and not far from Capernaum. "Wo unto thee, Chorazin!" is the only writing that records the existence of such a place; and little more is added respecting Bethsaida. This latter was the native town of Andrew, Peter, and Philip, but must not be confounded with another Bethsaida, on the north-east of the lake, where the five thousand were miraculously fed. All traces of Chorazin and Bethsaida, as well as of Capernaum, are lost. The vale of Genesareth, which once spread fertility around it, is tenanted by a people unconscious of their tread being upon the dust of judgment-stricken habitations: the Arabs, generally so tenacious of ancient names, having no knowledge or indication among them of such towns ever having existed. And prone as we may be to lament that no vestiges remain of scenes on which Heaven's intercourse with our world was so signally manifested, there is melancholy and awful satisfaction here afforded us respecting the prophetic veracity of Holy Writ; and even the darkness of oblivion, that shrouds the once privileged localities, is the very light in which we see traced the proofs of inspiration.

The town of Magdala was, perhaps, the Migdal-el of the days of Joshua (xix. 38), and it is now probably supplanted by the Moslem village of Mejdel, at the south end of the vale of Genesareth. Mary the Magdalene is generally considered to have been a native of Magdala.

South from Magdala, on the south-west border of the lake, was situated the town of Tiberias, now named Tubariyeh. The earliest notice we have of this place is in the New Testament. It was built chiefly by the tetrarch Herod Antipas, and received from him the name Tiberias, in honour of his friend and patron, the Roman emperor Tiberius. The encouragement given by Herod to settlers in this town, and the partiality of his administration concerning it, soon rendered it the chief city of Galilee; and the voluntary submission rendered by this place to Vespasian was probably the reason why the Jews, after the destruction of Jerusalem, were allowed and encouraged to reside in it. As a consequence of that privilege, it became a celebrated seat of Rabbinical learning. The French had occupation of Tiberias for a short time, during the invasion of Syria by Napoleon; and, like most other important towns in Palestine, it has prospered and declined repeatedly. It is now slowly recovering from the effects of an earthquake, which happened in 1837, on New Year's Day, and which almost converted the city into a heap of ruins; and although the chief sufferers in this calamity were Hebrews, that people still venerate Tiberias, as the holiest city in Galilee.

South of Tiberias, about half an hour's journey, are the celebrated baths, or hot-springs, of Ammaus, which are much frequented at certain seasons of the year by inhabitants of Syria.

Such were the principal cities on the western shore of Lake Genesareth in our Saviour's time; and mournfully does their present condition commemorate the advent of Israel's spiritual King. Heaven itself has constructed the monuments that tell of the greatness of that prophet who had no honour in his own country, who came unto his own, and his own received him not. Ruin is his dread remembrancer; and it has been even already more tolerable for Tyre and Sidon, than for most of those cities wherein he did signs and wonders, and spake as never man spake; for, whereas the Phœnician cities have, in some degree, survived the ravages of time, Capernaum, Chorazin, and Bethsaida,—more highly privileged, and more grievously ungrateful,—have utterly disappeared from the earth.

Of Cana and Nazareth, towns in the tribe of Zebulon, no mention is made in the Old Testament. Like many other localities, which New Testament events have rendered interesting, they appear to have been reserved for a sudden emergence from obscurity, when they should acquire glory by the condescension and humiliation of the Son of God. Mean as these villages have ever been, with reference to any earthly criterion of greatness, it is to such spots as these that our minds are directed for the contemplation of celestial perfection made tangible and imitable. There spiritual truth alighted from those viewless heights, which oriental fable dreamed of as the abode of the ever-flying fowl, and became footed that it might walk the earth, and manifest forth the glory of the only-begotten Deity. And it seems as if the selection of such scenes for Immanuel's sojourning had been designed to signify that truth delights to dwell with the lowly in heart, and reaps its richest fruits among the poor in spirit.

Nazareth—the village whereof even an unprejudiced Israelite said, "Can any good thing come out of Nazareth?"—was, for about thirty years, the dwelling-place of the Messiah, and thus occasioned his being called a Nazarene. The circumstance of our Saviour having conformed to the Jewish law, in not entering upon his ministry till thirty years of age, exposed him to the invidious impatience of his townsmen, when he eventually stood up in their synagogue, and applied to himself the prophecy of Messiah's heavenly consecration. They, who ought to have gloried most in the advent of the Deliverer, were mad enough to attempt to throw him headlong from the brow of the hill on which their city was built; while he, according to the simple majesty of the evangelic language, "passed through the midst of them, and went his way." We do not find Nazareth invested by the gospel narrative with the attractiveness of a scene of miracles; and we may presume that a very obdurate spirit of rejection actuated the inhabitants of a district where Jesus had so long been regarded as the unpretending son of Joseph the carpenter. As the brethren of David, when he appeared as the champion of Israel, contemptuously said to him, "Where hast thou left those few sheep in the wilderness?" so did the men of Nazareth, remembering the obscurity that had veiled the condition of Christ's earlier life, repudiate his profession of being a heaven-appointed messenger. And such was the ingratitude which met the condescension of a great and glorious Being, who, honouring Nazareth by his long residence in one of its dwellings, was content to bear the reproach of being called a Nazarene.

But the rejection of the Saviour, in the days of his personal manifestation at Nazareth, has given place to such outward veneration of the locality, as is not wholly prompted by the love of truth. For many things which time has hidden or destroyed, the monks of Nazareth have found substitutes to present to travellers, as mementoes of the Saviour's history. A church, occupied by Romish friars, is said by them to enclose the site of the virgin mother's habitation ; while it is affirmed that the Santa Casa itself (the holy house in which Mary reared the Saviour of the world) is now at Loretto, whither it was miraculously translated by angelic hands. They determine the very spot where the Virgin stood to listen to the annunciation, and the workshop in which was earned the livelihood of the holy family. Nature, however, has preserved the only "sacred places" that may be identified ; and of these it is interesting enough that we are able to specify, with probability, that eminence from which our Lord was to have been cast down, and the fountain from which the mother of our Lord was accustomed to draw water. Indeed, it must be exciting enough to look upon any of those permanent features of nature, amidst which "God manifest in the flesh" was a familiar wanderer ; and Nazareth, though now reduced below its former humble enough condition, has sufficiently maintained its position to assure us respecting the identity of objects amidst which the youthful Jesus meditated the execution of his heavenly Father's business.

There are now about 3000 residents at Nazareth, the greater portion of whom are Christians. It stands on the side of a hill, on the north of the great plain of Esdraelon, and consists, for the most part, of stone buildings with flat roofs. Fig-trees, olives, and vines luxuriantly surround it ; and the crops of corn in its neighbourhood are among the finest in Palestine.

A small town, about four miles N.E. of Nazareth, corresponds to the ancient Cana of Galilee. This place was distinguished by our Lord's first miracle, the conversion of water into wine, a marvel which was designed to constitute a foundation of his great claim to be accounted "the Lord from heaven." No faith was antecedently demanded as a condition of performing that miracle. Inert, unconscious matter was made the subject of it, that thereafter, when the great leading feature of his mighty works—benevolence—was to be developed, the recipients of his omnipotent mercy might be dealt with according to their faith,—a faith which the preparatory miracle at Cana was designed to inspire.

Such vessels as were used for ceremonial cleansing at the marriage feast are still in use in the neighbourhood of Cana. They are formed of the compact limestone so abundant in the country ; and some of them are so old as to have an appearance suitable for the imposition which asserts them to be those in which the miraculous transmutation took place. But, although faith must withhold from those relics the degree of veneration which is claimed for them, it cannot be unmoved or unprofitably actuated, while there is presented a testimony so interesting as the existence, in this locality, of vessels similar to those which contained the first palpable demonstration of the Redeemer's almightiness.

The second of our Lord's miracles in Galilee was performed also at Cana, when the nobleman of Capernaum besought Jesus for the restoration of a dying child. And, though we read of no other mighty works having been performed at this place, it has lingered into modern existence, surviving the disappearance of Capernaum, in which so many signs and wonders were exhibited. The nobleman of Capernaum and his son have their graves also hidden in oblivion; but Cana remains a cenotaph to the memory of the man who believed the word which Jesus had spoken, and returned to make his home the scene of Christian gratitude and worship. J. H.

GENERAL EXAMINATION OF TRAINING SCHOOLS.

CHRISTMAS, 1849.

VIII.—DOMESTIC ECONOMY AND NATURAL HISTORY.

SECTION I.

1. GIVE directions for preparing whitewash for a cottage. How long will it take to dry? How should flannel be washed to prevent it from shrinking?

2. Give full directions for preparing rush candles, and calculate the expense of burning one five hours daily during the winter quarter.

3. Give receipts for cooking, sheep's head and meat pudding, and compare the expense and nourishment with a dinner of potatoes, bread, and cheese.

4. Give full directions for keeping poultry, and make an estimate of the expense and profit in your own county.

SECTION II.

1. Give receipts for preparing linseed and mustard poultices, and directions for applying leeches, and for purifying water.

2. Give receipts for preparing arrow-root and sago, and write full directions for general conduct in a sick-room.

3. Write a letter of advice to a young nursery-maid on her work and conduct, and tell her how to dispose of 30*s*. in supplying herself with clothes.

4. Estimate the cost of furnishing a cottage of three rooms in the most economical manner.

SECTION III.

1. Enumerate the different kinds of minerals, and describe one or more of the most useful and common.

2. Enumerate the different parts of a plant, and describe any common plant, accurately, and as in giving a lesson.

3. Give an accurate account of the potato plant.

4. What plants or trees are principally used for food? Describe the distribution of the cereal grasses.

SECTION IV.

1. Name the four grand divisions of animals, and the subdivisions of mammalia.

2. Classify the common birds of England, and describe the habits and structure of one of the migratory birds.

3. Into how many classes are articulated animals divided? To which do leeches, crabs, and glow-worms belong?

4. State the geographical distribution of the principal carnivorous and ruminant quadrupeds.

IX.—NOTES OF A LESSON.

SECTION I.

Prepare notes of a lesson on one of the following subjects:—On Truthfulness, Diligence, Punctuality, Cheerfulness, Private Prayer.

SECTION II.

Prepare notes of a lesson on the character of one of the following persons:—On the character of Jacob, Gideon, Miriam, Dorcas, Lydia, St. Luke.

SECTION III.

Prepare notes of a lesson on one of the following subjects:—On the manners and customs of the Anglo-Saxons, The topography of any city in England, The ancient remains in Great Britain, The topography of Jerusalem.

SECTION IV.

1. Describe the best arrangements for teaching a school of 80 girls, between 7 and 13 years old, with one pupil teacher.

2. What subjects should be taught? what time given to each subject? and with what text-books in such a school?

X.—SCRIPTURE HISTORY.

SECTION I.

1. Write a full account of the life of Moses, and compare his office, works, and character with those of our Saviour.

2. Give some account of those kings by whom idolatry was introduced or favoured in the two kingdoms of Judah and Israel, and give instances of national judgment inflicted for this sin.

3. In what reigns did Hoshea, Amos, Isaiah, Jeremiah respectively deliver their prophecies? Give a full account of the lives of the two latter prophets, and state clearly the leading subjects of their predictions.

4. Give an account of the principal transactions in Palestine between the return from the Babylonian exile and the coming of Christ.

SECTION II.

1. Give an exact account of the Tabernacle of Moses. What allusions are made to it in the New Testament. Explain the typical meaning of its parts.

2. For what object does the ceremonial law appear to have been instituted? Give an account of the sacrifices that were offered by lepers on their recovery. How many kinds of sacrificial offerings are prescribed in the Pentateuch?

3. Name the prophets who lived between the time of Eli and Uzziah. Describe the characters of the most celebrated of them, and explain the peculiarities of their office.

4. Write out the leading prophecies that refer to the calling of the Gentiles; and give an exact explanation of the prophecy of the seventy weeks.

SECTION III.

1. Compile an exact account of our Lord's nativity and early life from the Gospels of St. Matthew and St. Luke; and give references to the prophecies fulfilled in those circumstances.

2. State, briefly and clearly, the lessons to be learned from those miracles of our Lord which are described by St. John.

3. In what respect do the four Gospel narratives agree and differ? Account for the differences, and state the principal characteristics of each of the Evangelists.

4. Give a full account of St. Paul's life, from his last visit to Corinth to his arrival at Rome.

5. Name the Epistles of St. Paul, according to the order of time. Give an account of the Epistles to the Thessalonians, to the Corinthians, and to Titus.

SECTION IV.

1. Explain the parable of the Unjust Steward.

2. State distinctly the doctrine of our Lord's person. Explain fully the threefold offices of Christ.

3. What special acts of worship are required under the Gospel? Give a full account of the habits of the early Christians from the New Testament.

SCOTTISH EPISCOPAL CHURCH.

APPEAL ON BEHALF OF A SCHEME FOR TRAINING TEACHERS.

To all faithful Members of the Church in Scotland, with prayer that God may both stir up our hearts to every good work, and prosper the work of our hands upon us.

THE friends of education in the principles of the Episcopal Church of Scotland are respectfully informed, that there is at this time a very urgent demand for well-trained schoolmasters, to conduct efficiently the efforts that are being made to train the children of the poorer members of the Church in Christian faith and duty.

It is found that well-trained schoolmasters from England demand a larger stipend than can generally be raised in this unendowed Church; and, also, that the managers of the English Training-schools not unnaturally object to supply teachers (trained at the expense of English contributors) for schools situated beyond the limits of the country from which the contributions are drawn.

Under these circumstances, the Educational Committee of the Episcopal Church Society have deliberated on the best means of meeting the existing want, and they recommend the appointment (for a limited period) of a master competent to train any youths who may be selected in the several dioceses of this church, as seemingly well calculated for the important office of educating the children who may be placed under their charge.

It may seem needless to remark on the futility of building schools, unless teachers of sound faith and sufficient qualifications be found to take charge of them; and yet it has been too generally taken for granted, that any person possessed of the most elementary knowledge, is competent to conduct a school for the children of the poor. A more reasonable view of the subject, it is hoped, is now finding its way in the conviction of all who take an interest in education; and it is seen that a supply of competent teachers is the most indispensable condition for any successful efforts to establish efficient schools.

It is supposed, however, that if a well-qualified training-master were engaged for three years, and exhibitions provided for the youths who might be duly recommended for the benefit of his instructions, a sufficient number of schoolmasters would be provided for our present necessity; and that if a demand should again arise, it may be met by a similar effort.

In securing this important object, an annual expenditure of about £300 will be incurred. The youths would employ their mornings in receiving the instructions of the master, and in the afternoon would acquire, under his direction, familiarity with the practice of teaching, for which opportunity would be afforded them, either in the mission school or other schools connected with our Church in Edinburgh.

The Committee of the Church Society have set aside the sum of £100 for this purpose. It may be confidently supposed that this grant will be renewed for the necessary period: and it is hoped that the remaining annual sum of £200 may be raised among such friends of Church Education as may be willing to guarantee subscriptions to that amount for the period of three years.

The Bishops of Edinburgh and Glasgow have very willingly acceded to the request of the committee, that they should undertake the office of making known as widely as possible the plan that has thus been thought advisable.

They have therefore drawn up the preceding statement, and very earnestly recommend this great and important object to all faithful members of the Church who have the means of giving aid in so benevolent and Christian an undertaking.

C. H. Terrot,
Bishop of Edinburgh.
W. J. Trower,
Bishop of Glasgow and Galloway.

"CHEAP" READING IN THE LANCASHIRE COTTON FACTORIES.

Every London publisher knows that Lancashire furnishes no unimportant part of the literary market of England. I was very desirous of ascertaining, therefore, the species of works most in demand amongst the labouring and poorer classes. The libraries in the better parts of the town are of course stocked in much the same way as the libraries in the better parts of London. I wished to ascertain the species of cheap literature most in vogue, and accordingly applied to Mr. Abel Heywood, of Oldham Street, one of the most active and enterprising citizens of Manchester, who supplies not only the smaller booksellers of the town, but those throughout the county, with the cheap works most favoured by the poorer reading classes. The contents of Mr. Heywood's shop are significant. Masses of penny novels and comic song and recitation books are jumbled with sectarian pamphlets and democratic essays. Educational books abound in every variety. Loads of cheap reprints of American authors, seldom or never heard of amid the upper reading classes here, are mingled with editions of the early Puritan divines. Double-columned translations from Sue, Dumas, Sand, Paul Feval, and Frederic Soulie jostle with dream-books, scriptural commentaries, Pinnock's guides, and quantities of cheap music, sacred melodists, and little warblers. Altogether the literary chaos is very significant of the restless and all-devouring literary appetite which it supplies. Infinitely chequered must be the *morale* of the population who devour with equal gusto dubious *Memoirs of Lady Hamilton*, and authentic narratives of the *Third Appearance of John Wesley's Ghost*, duly setting forth the opinions of that eminent shade upon the speeches of Dr. Bunting.

So much for the *primâ facie* aspect of Mr. Heywood's literary warehouse. I was courteously furnished with details of his business, which throw an unquestionable light upon the tastes of the operative reading world of Lancashire.

That species of novel, adorned with woodcuts, and published in penny weekly numbers, claims the foremost place. The contents of these productions are, generally speaking, utterly beneath criticism. They form, so far as I can judge, the English reflection, exaggerated in all its most objectionable features, of the French *Feuilleton Roman*. In these weekly instalments of trash Mr. Heywood is compelled to be a large dealer, as will appear from the following statement:—

Angelina
Almira's Curse
Claude Duval
Eardley Hall
Ela the Outcast
Gentleman Jack
Gambler's Wife
Gallant Tom
Lady Hamilton
Mazeppa
Mildred
Old Sanctuary
Royal Twins
String of Pearls
The Brigand
The Oath

Average 6000 weekly sale. All this mass of literary garbage is issued by Lloyd, of London, in penny numbers.

Of similar works, published also in numbers at 1*d.* per week, Mr. Heywood sells—

Adam Bell	200
Claude Duval (Dipple)	400
Court of London	1,500
Gretna Green	460
Love Match	750
Mysteries of London	1,000
Nell Gwynne	700
Perkin Warbeck	130

Of the penny weekly journals, some of them, such as *Barker's People*, are political and democratic, but the greater number social and instructive, the Lancashire sale is—

Barker's People	22,000
Reynolds's Miscellany	3,700
Illustrated Family Journal	700
London Journal	9,000
Family Herald	8,000
Home Circle	1,000
Home Journal	1,000
Penny Sunday Times	1,000
Lancashire Beacon	3,000
Plain Speaker	200
Potter's Examiner	1,500
Penny Punch	360
The Reasoner	160
Chat	200

Of these publications the *Lancashire Beacon* and the *Reasoner* are avowedly infidel. I have not had an opportunity of seeing the latter, but in the number of the former which I perused, I found nothing more fatal to Christianity than abuse of the Bishop of Manchester. The Lancashire mind is indeed esentially a believing, perhaps an over-believing one. Fanaticism rather than scepticism is the extreme into which it is most likely to hurry. In Ashton-under-Lyne Johanna Southcote's bearded followers still meet under the roof of the New Jerusalem. In remote districts astrologers watch the influences of the planets; and all quackeries, moral and physical—the remedies of Professor Mesmer or of Professor Holloway—equally find a clear stage and very great favour.

But to return to the cheap book trade of Lancashire. Of the better class of weekly publications, generally selling at 1½*d.*, Mr. Heywood makes the following returns:—

Domestic Journal	600
Eliza Cook's Journal	1,250
Chambers's Journal	900
Chambers's Information for the People	1,200
Hogg's Instructor	60
People's Journal	400

The cheap doubled-columned editions of Dickens's and Bulwer's books sell as follow:—

Dickens	250
Bulwer	200

The sale of *Punch* is 1200. The *Family Friend* sells 1500 monthly, at 2*d.*; the *Family Economist* 5000 monthly, at one penny.

Mr. Heywood informed me that the sale of cheap books has decidedly not increased in consequence of the ten hours' bill. The same assertion was made by another extensive, though much smaller, bookseller, in the vicinity of Garrett Lane. The department of the literary trade which alone seemed

to have received any impetus from recent legislation was the sale of copy-books which improved. The only classification of the purchasers of cheap literature which I found practicable to make was, that the comic or *soi-disant* comic publications were usually patronised by clerks and shopmen, while tales were inquired for by the working-classes, commonly so called. It is, indeed, by the links of a story that the operative taste seems to be most bound. For the encouragement of literary speculators, I may add, that every cheap book is sure of a sale in Lancashire—at first.

At the Library of the Mechanics' Institute, and at that of the Ancoats Lyceum, I was informed that the ten hours' bill had decidedly made no change in the reading habits of the subscribers.—*Morning Chronicle.*

OUTLINE OF A COURSE OF STUDY FOR PRESENT USE AT BISHOP'S COLLEGE, LENNOXVILLE, CANADA—FOR GENERAL STUDENTS.

[We insert this document as illustrative of the state of Church Education in Canada.—Ed.]

First Year.

Greek.—Xenophon's Anabasis—Euripides or Homer—Herodotus commenced.

Latin.—Cicero's Orations or Offices—Virgil's Eclogues or Æneid—Horace: Odes.

Mathematics.—Algebra, p. 1—Euclid up to B. XI. 20. Plane Trigonometry.*

Divinity.—Part of the Gospels—Old Testament: the Pentateuch.†

Hebrew (*if desired*).—Frey's Grammar—Book of Genesis.†

History.—Ancient: Grecian or Roman.

Composition.—English and Latin Prose.

Second Year.

Greek.—Herodotus continued—Euripides or Sophocles.

Latin.—Cicero: Philosophical works or letters—Virgil: Georgics or later Books of the Æneid—Horace, Satires and Epistles.

Mathematics.—Algebra, p. 2—Differential Calculus—Analytical Geometry (including Conic Sections)—Mechanics, p. 1.*

Divinity.—The Gospels continued—Old Testament: The Historical Books—Paley's Evidences.

Hebrew (*if desired*).—The Book of Psalms.

*** Math. text books used, (those marked * need not be procured if not convenient).**
Algebra—Wood's, *Hall's.
Plane Trig.—*Snowball's, *Hymer's
Conic Sect.—Hamilton's or Hymer's.
Integ. and diff. calc.—Hall's.
Mechanics—Whewell's.
Optics—Griffin's.

† *Divinity Students* will be required to read some books of the Septuagint version, and to attend the Hebrew Course.

History.—Grecian or Roman—(a sketch of each will be completed in two years).

Logic.—Aldrich's or Huysdhe's.

Composition.—English—Latin Prose and Verse—Greek Prose.

THIRD YEAR.

Greek.—Thucydides—Sophocles or Æschylus.

Latin.—Livy or Tacitus—Juvenal.

Mathematics.—Differential and Integral Calculus—Spherical Trigonometry and Plane Astronomy—Mechanics, p. 2 (including the Principles of Mechanism, and Civil Engineering)—Optics.*

Divinity.—The Acts—Paley's Horæ Paulinæ—Prophecy.

Hebrew (if desired).—The Book of Isaiah.

History.—Modern, English—Chronology.

Rhetoric.—Whately's.

Moral Philosophy.—Abercrombie on the Intellectual Powers—Abercrombie on the Moral Feelings—or Stewart's Philosophy of the Human Mind.

Composition.—English—Latin and Greek Prose and Verse.

SUPPLEMENTARY LECTURES BY THE PROFESSOR OF MATHEMATICS.

1st Year.	The General Properties of Matter—Principles and Notation of Chemistry.
2nd ,,	Physical Geography.
3rd ,,	Electricity—Theories of Light, Heat, and Sound.

Lectures will also be delivered by the Professor of Hebrew and Rabbinical Literature on the following subjects:

Jewish and Biblical History and Antiquities,
The Hebrew Ritual,
Biblical Hebrew and Rabbinical Literature,
Symbolical language,
Rabbinical traditions, and reconcilement of apparently contradictory passages.

ADDITIONAL COURSE FOR DIVINITY STUDENTS.—FOURTH YEAR.

Greek Testament.—The Epistles.

Evidences.—Butler's Analogy.

Systematic Theology.—Burnet on the XXXIX Articles—Pearson on the Creed.

History.—Early Church—Mosheim—
,, Reformation—Burnet.

Liturgy and Ritual.—Wheatley on the Common Prayer—Hooker, B. V.

Controversy with Rome.—Barrow on the Pope's Supremacy.

Composition.—Preparatory to Sermon-writing.

Hebrew.—The Minor Prophets.

TERMS OF ADMISSION.

All Candidates for admission are requested to give the earliest possible notice to the Principal.

Candidates for admission will be expected to show a sufficient acquaintance with the Greek and Latin languages, to be able to read and translate each language readily, and to translate English into Latin. They will be examined in Mathematics,* in the earlier books of Euclid and Algebra, and will be required to show a competent knowledge of the Bible, to translate the New Testament fluently from the original, and to answer questions both from the Old and New Testament. The judgment as to the sufficiency of the Candidate's attainments to be left in the hands of the Professor who examines him.—Rule vi. 1. a.

Every member of the College shall, on admission, lodge in the hands of the Bursar, a *deposit or sufficient security for the sum of* £15, for the payment of all College dues, which deposit or security shall be returned to him on his leaving College, unless he shall be indebted to the College.—vi. 1. d.

All Students will be required to provide themselves with a decent Gown and Cap, according to a prescribed fashion.—vi. 3. a. These may be had on the spot.

The expenses for *board, fuel, lights, and washing*, do not ordinarily exceed £27 10*s*., and the charge to each Student for tuition, room-rent, and the use of the Library, is £12 10*s*. per annum.

The rooms are all supplied with plain furniture,—each Student finds his own bedding.

Terms.—Michaelmas.—From September 1st, to December 20th.
Lent.—From January 20th, to the Thursday in Passion week.
Easter.—From the Thursday after Easter, to July 1st.

Notices of Books.

ASPECTS OF NATURE, IN DIFFERENT LANDS AND DIFFERENT CLIMATES; WITH SCIENTIFIC ELUCIDATIONS BY ALEXANDER VON HUMBOLDT. TRANSLATED BY MRS. SABINE. In 2 vols. (London : *Longmans*).

THE German idioms, which so strongly mark the writings of Humboldt, are better translated in this work than in most others of a similar kind. Its varied contents must be read to be properly appreciated. We wish that every elementary teacher could enjoy the treat which we have experienced, in following the indefatigable traveller to the recesses of the primeval forests, to the boundless surface of the Steppe, and the lofty ridges of the Andes. If our readers derive any delight from the study of physical geography, they will be charmed with Humboldt's "Aspects of Nature." We cannot resist the temptation of quoting one descriptive passage, because it may be made the foundation of a good gallery lesson :—

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* The first three books of Euclid and Algebra to the end of Algebraic Fractions are required, together with an accurate knowledge of Proportion, and Vulgar and Decimal Fractions in Arithmetic.

"Since the discovery of the new continent the Llanos have become habitable to men. In order to facilitate communication between the Oronoco country and the coasts, towns have been built here and there on the banks of the streams which flow through the Steppes. The rearing of cattle has begun over all parts of these vast regions. Huts, formed of reeds tied together with thongs and covered with skins, are placed at distances of a day's journey from each other; numberless herds of oxen, horses, and mules, estimated at the peaceful epoch of my journey at a million and a half, roam over the Steppe. The immense multiplication of these animals, originally brought by man from the Old Continent, is the more remarkable from the number of dangers with which they have to contend.

"When, under the vertical rays of the never-clouded sun, the carbonized turfy covering falls into dust, the indurated soil cracks asunder as if from the shock of an earthquake. If at such times two opposing currents of air, whose conflict produces a rotatory motion, come in contact with the soil, the plain assumes a strange and singular aspect. Like conical-shaped clouds, the points of which descend to the earth, the sand rises through the rarefied air in the electrically charged centre of the whirling current; resembling the loud waterspout dreaded by the experienced mariner. The lowering sky sheds a dim, almost straw-coloured, light on the desolate plain. The horizon suddenly draws nearer; the Steppe seems to contract, and with it the heart of the wanderer. The hot dusty particles which fill the air increase its suffocating heat, and the east wind, blowing over the long-heated soil, brings with it no refreshment, but rather a still more burning glow. The pools which the yellow fading branches of the fan palm had protected from evaporation now gradually disappear. As in the icy north the animals become torpid with cold, so here, under the influence of the parching drought, the crocodile and the boa become motionless and fall asleep, deeply buried in the dry mud. Everywhere the death-threatening drought prevails, and yet, by the play of the refracted rays of light producing the phenomenon of the mirage, the thirsty traveller is everywhere pursued by the illusive image of a cool, rippling, watery mirror. The distant palm-bush, apparently raised by the influence of the contact of unequally heated and therefore unequally dense strata of air, hovers above the ground, from which it is separated by a narrow intervening margin. Half concealed by the dark clouds of dust, restless with the pain of thirst and hunger, the horses and cattle roam around, the cattle lowing dismally, and the horses stretching out their long necks and snuffing the wind, if haply a moister current may betray the neighbourhood of a not wholly dried-up pool. More sagacious and cunning, the mule seeks a different mode of alleviating his thirst. The ribbed and spherical melon-cactus conceals under its prickly envelope a watery pith. The mule first strikes the prickles aside with his fore feet, and then ventures warily to approach his lips to the plant and drink the cool juice. But resort to this vegetable fountain is not always without danger, and one sees many animals that have been lamed by the prickles of the cactus.

"When the burning heat of the day is followed by the coolness of the night, which in these latitudes is always of the same length, even then the horses and cattle cannot enjoy repose. Enormous bats suck their blood, like vampires, during their sleep, or attach themselves to their backs, causing festering wounds, in which musquitoes, hippobosces, and a host of stinging insects, niche themselves. Thus the animals lead a painful life during the season when, under the fierce glow of the sun, the soil is deprived of its moisture!

"At length, after the long drought, the welcome season of the rain arrives;

and then how suddenly is the scene changed! The deep blue of the hitherto perpetually cloudless sky becomes lighter; at night, the dark space in the constellation of the Southern Cross is hardly distinguishable; the soft phosphorescent light of the Magellanic clouds fades away; even the stars in Aquila and Ophiucus in the zenith shine with a trembling and less planetary light. A single cloud appears in the South, like a distant mountain, rising perpendicularly from the horizon. Gradually the increasing vapours spread like mist over the sky, and now the distant thunder ushers in the life-restoring rain. Hardly has the surface of the earth received the refreshing moisture, before the previously barren Steppe begins to exhale sweet odours, and to clothe itself with kyllingias, the many panicules of the paspalum, and a variety of grasses. The herbaceous mimosas, with renewed sensibility to the influence of light, unfold their drooping slumbering leaves to greet the rising sun; and the early song of birds, and the opening blossoms of the water plants, join to salute the morning. The horses and cattle now graze in full enjoyment of life. The tall springing grass hides the beautifully spotted jaguar, who lurking in safe concealment, and measuring carefully the distance of a single bound, springs cat-like, as the Asiatic tiger, on his passing prey.

"Sometimes (so the Aborigines relate), on the margin of the swamps, the moistened clay is seen to blister and rise slowly into a kind of mound; then with a violent noise, like the outbreak of a small mud volcano, the heaped-up earth is cast high in the air. The beholder acquainted with the meaning of this spectacle flies, for he knows there will issue forth a gigantic water-snake or a scaly crocodile, awakened from a torpid state by the first fall of rain.

"The rivers which bound the plain to the South, the Arauca, Apure, and Payara, become gradually swollen; and now nature constrains the same animals, who in the first half of the year panted with thirst on the dry and dusty soil, to adopt an amphibious life. A portion of the Steppe now presents the aspect of a vast inland sea. The brood mares retire with their foals to the higher banks, which stand like islands above the surface of the lake. Every day the space remaining dry becomes smaller. The animals, crowded together, swim about for hours in search of other pasture, and feed sparingly on the tops of the flowering grasses rising above the seething surface of the dark-coloured wave. Many foals are drowned, and many are surprised by the crocodiles, killed by a stroke of their powerful notched tails, and devoured. It is not a rare thing to see the marks of the pointed teeth of these monsters on the legs of the horses and cattle who have narrowly escaped from their bloodthirsty jaws. Such a sight reminds the thoughtful observer involuntarily of the capability of conforming to the most varied circumstances, with which the all-providing Author of nature has endowed certain animals and plants.

"The ox and the horse, like the farinaceous cerealia, have followed man over the whole surface of the globe, from India to Northern Siberia, from the Ganges to the river Plate, from the African sea-shore to the mountain Plateau of Antisana, which is higher than the summit of the Peak of Teneriffe. The ox, wearied from the plough, reposes, sheltered from the noontide sun in one country by the quivering shadow of the northern birch, and in another by the date palm. The same species which, in the East of Europe, has to encounter the attacks of bears and wolves, is exposed in other regions to the assaults of tigers and crocodiles.

"But the crocodile and jaguar are not the only assailants of the South American horses; they have also a dangerous enemy among fishes. The marshy waters of Bera and Rastro are filled with numberless electric eels, which can at pleasure send a powerful discharge from any part of their slimy yellow spotted bodies. These gymnoti are from five to six feet in length, and are powerful enough to kill the largest animals when they discharge their nervous organs at once in a favourable direction.

"The route from Uritucu through the Steppe was formerly obliged to be changed, because the gymnoti had increased to such numbers in a small stream that in crossing it many horses were drowned every year, either from the effects of the shocks they received, or from fright. All other fishes fly the vicinity of the formidable eels. Even the fisherman angling from the high bank fears lest the damp line should convey the shock to him from a distance. Thus, in these regions, electric fire breaks forth from the bosom of the waters.

"The capture of the gymnoti affords a picturesque spectacle. Mules and horses are driven into a marsh which is closely surrounded by Indians, until the unwonted noise and disturbance induce the pugnacious fish to begin an attack. One sees them swimming about like serpents, and trying cunningly to glide under the bellies of the horses. Many of these are stunned by the force of the invisible blows; others, with manes standing on end, foaming, and with wild terror sparkling in their eyes, try to fly from the raging tempest. But the Indians, armed with long poles of bamboo, drive them back into the middle of the pool. Gradually the fury of the unequal strife begins to slacken. Like clouds which have discharged their electricity, the wearied fish begin to disperse, long repose and abundant food are required to replace the galvanic force which they have expended. Their shocks become gradually weaker and weaker. Terrified by the noise of the trampling horses, they timidly approach the bank, where they are wounded by harpoons, and cautiously drawn on shore by non-conducting pieces of dry wood.

"Such is the extraordinary battle between horses and fish. That which forms the invisible but living weapon of this electric eel;—that which, awakened by the contact of moist dissimilar particles, circulates through all the organs of plants and animals;—that which, flashing from the thunder-cloud, illumines the wide skyey canopy;—that which draws iron to iron, and directs the silent recurring march of the guiding needle;—all, like the several hues of the divided ray of light, flow from one source; and all blend again together in one perpetual, everywhere diffused, force or power."

LETTERS TO A LADY, BY THE BARON WILHELM VON HUMBOLDT. FROM THE GERMAN. WITH AN INTRODUCTION BY DR. STEBBING. (London: *Arthur Hall.*)

We cannot better explain the contents of this agreeable collection than by quoting the introduction entire. The letters themselves are chiefly pleasing on account of the graceful manner in which they describe the simple occurrences of every day:—

"Wilhelm von Humboldt was born in Berlin, on the 22nd of June, 1769. Having distinguished himself greatly at the University, he was early admitted to public employments. Such was his reputation in after years, for ability and virtue as a diplomatist, that he was successively Ambassador at Rome, Vienna, and London. At the Convention of Peace, assembled at Prague, he appeared in the character of Plenipotentiary, and was one of the principal ministers at the Congress held in the Austrian capital. After a life of long and useful labour, he died at his favourite villa in Tegel, near Berlin, on the 8th of April, 1836.

"While the brother of this celebrated man, Alexander von Humboldt, was engaged in those pursuits of science which have rendered him one of the greatest naturalists of any age or country, he was himself employed in the study of profound classical and philosophic criticism. Notwithstanding his high official occupations, he found time to examine, with the minutest attention, the grand models of art, in all its various forms. He became the intimate associate of Goethe, Schiller, and the other distinguished writers of the age. They appealed to him in all matters where the success of their labours appeared to depend upon attention to the first principles of composition, or on a reference to the laws by which nature determines, as well as creates, what is beautiful. Thus eminent in some of the noblest paths of human exertion, Wilhelm von Humboldt was one of those men of whom we are always glad to cherish the minutest memorials. The letters of truly great men may generally be depended on as expressing their real feelings. If we wish to learn the character of inferior men who have thrust themselves into notoriety, we can have nothing worse than their letters for our guide.

" But there is more than an ordinary interest in these letters of Wilhelm von Humboldt. We must tell the brief story of the circumstances in which they originated. While the writer was still a young man, and pursuing his studies in the University, he enjoyed a short vacation at Pyrmont, a favourite bathing-place. There he met with a clergyman and his daughter. They spent a few days together in the ordinary intercourse usual to such retreats, when tastes and habits of thinking make people, though strangers, agreeable to each other. When the brief vacation which Humboldt allowed himself was ended, he returned to Gottingen; but neither he nor the young lady ever forgot their meeting at Pyrmont. It was not passion—it was not what is commonly called love—which had been awakened in their hearts. If such a thing be possible between two such people, it was friendship, the highest and most intellectual, just modified by incipient affection. They never met again till they were in the decline of life, and then only casually for a few hours. Humboldt married a lady of great accomplishments, of whom he was devotedly fond, and who died only a few years before himself. The lady to whom these letters were written also married, but we know less about her matrimonial felicity than of Humboldt's. Her husband died after they had been married only five years. She was left with an ample fortune; but the period had arrived when the German states were thrown into confusion by the progress of the French armies. Circumstances had led her to Brunswick. She resided there some years; and when the public treasury was nearly exhausted, she was one of the first to answer the appeal made to those who possessed any wealth. Her fortune was intrusted to the state. Affairs became more and more involved. The Duke of Brunswick, in whose honour she had placed her chief reliance, died at Waterloo, and she eventually found herself a beggar. The state of her health prevented her making any active exertions for her own support. She had but few friends, and her case was one of equal hardship and sorrow.

" Wilhelm von Humboldt had now risen to the highest diplomatic rank, his noble character and influence were universally known. The feeling with which he had inspired our heroine's heart was as ardent as ever. She trusted that he might not altogether have forgotten their three days at Pyrmont. Twenty-six years had now passed away, but time has little to do with any sentiment which has life and reality in it. There was reason to hope that the representative of a powerful state at the Congress at Vienna might be able to accomplish something for one who had so generously risked her whole fortune in the public service. She at length summoned resolution to address him. Her letter received an immediate answer. It was such a one as might have been expected from such a man. He could not effect anything with regard to her lost property; but he could fulfil the duty of a warm and faithful friend. The talents of his correspondent, her general tenor of sentiment and demeanour, had charmed him in their youth. This sentiment was reawakened and increased, by the style of thought and feeling displayed in her letter. Obeying the dictates of his generous mind, he appealed to her friendship, and insisted that she should give up for the moment, every other consideration but that which regarded her health. He did not believe that with a character like hers, she could endure to live in dependence. He did not think it good that any one should yield to such a state, while the power of exertion remained. It was therefore his hope that the time would come when she would be able to employ her abilities in securing for herself an honourable maintenance. But, in the mean while, freedom from care was altogether necessary; and he therefore desired that she should accept from him such a sum as would provide for her comfort and tranquillity one entire year.

"The mode in which the offer was made, rendered the boon inestimably precious. It was effectual to the delivery of a noble and elegant mind from overwhelming distress. The only return for which Humboldt asked, was the continuance of the correspondence thus commenced. His character, both as a man and a philosopher, is singularly exhibited in the wishes which he expressed respecting the kind of information which he looked for in the letters of his friend. He desired a minute description of familiar objects; of persons known in former times; of all, in short, which could help to give distinctness and substance to the thoughts and fancies which had been suggested to his mind.

"Some considerable interval broke the continuity of the correspondence, but it was carried on to within a very short period of Humboldt's death. His afflicted friend long kept the letters as a treasure, the value of which was increased by their being peculiarly her own. Such, however, was the consolation, the improvement, and general good, which she had derived from these letters, that she was, at length, induced to arrange them for publication. This task was completed but a little while before her own death. Few people can read the history of the correspondence, or the correspondence itself, without being thankful that they have been preserved."

THE FINCHLEY MANUALS OF INDUSTRY. NO. I. COOKING; OR, PRACTICAL AND ECONOMICAL TRAINING FOR THOSE WHO ARE TO BE SERVANTS, WIVES, AND MOTHERS; MANAGEMENT OF THE KITCHEN, PLAIN COOKING, BREAD MAKING, BAKING, BREWING, PICKLING, &C. PREPARED FOR THE USE OF THE NATIONAL AND INDUSTRIAL SCHOOLS OF THE TRINITY, AT FINCHLEY. (London : *Masters.*)

THIS volume is in the right direction. We imagine we see the first class of girls in a country national school, instead of being decorated with a pewter medal, presented each with a copy of this manual, or with some similar treatise, when they can explain the methods of practical and economical cookery which are here recommended. If the recipes were largely adopted, the diet of our peasantry would be wonderfully improved. We await with much interest the publication of the rest of the series.

A FIRST, OR ELEMENTARY, ATLAS; FOR THE USE OF SCHOOLS: CONTAINING TEN MAPS, ENGRAVED BY S. HALL. (London : *Longmans.*)

THIS is really a wonderful achievement in its way. Here are ten maps, printed on steel with great clearness and beauty and well coloured, for eighteen-pence. When such is the case, surely an attempt will be made by every national schoolmaster to persuade his boys of the first and second classes to put by a halfpenny for thirty-six weeks, that they may possess an atlas of their own.

STORIES FOR SUMMER DAYS AND WINTER NIGHTS. VOL. I. (London: *Groombridge and Sons.*)

THESE are lively and pleasing stories, of which the most fastidious cannot complain. They have been already stolen from our library table and carried off by a party of young readers, pleased with their pretty binding and pictures. Messrs. Groombridge will soon earn the gratitude of parents, teachers, and children, if they continue to send forth books like that which we are now describing.

COTTAGE COOKERY. BY ESTHER COPLEY, AUTHOR OF "COTTAGE COMFORTS," ETC., ETC. REPRINTED FROM THE "FAMILY ECONOMIST." (London: *Groombridge and Sons.*)

MRS. COPLEY has long enjoyed a large reputation as a good, practical writer of books such as that now before us. We have not tried all her recipes, but we are informed by some, very competent to judge of them, that they are very economical, and make very good dishes.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 51.—*Proposed by Mr. O. Clazey, Durham.*

A PERSON has two vessels, one of which contains 12 gallons of rum, and the other 20 gallons of water: how many gallons must he transfer out of each, so as to render the spirit in each vessel of equal strength.

Answered by Mr. F. R. Crampton.

Here each vessel must contain the same proportion of spirit to water.

$$\text{Quantity rum in 1 gal of mix.} = \frac{12}{12+20} = \tfrac{3}{8}\text{ gal.}$$

$$\text{,,} \quad 20 \quad \text{,,} \quad = \tfrac{3}{8} \times 20 = 7\tfrac{1}{2}\text{ gal.}$$

which is the quantity of liquid that must be transferred from each vessel into the other.

QUES. 52.—*Proposed by Mr. Elsee, Henley.*

What must be the diameter of a spherical ball, made of copper $\frac{1}{100}$ of an inch thick, so that it may just float in the air, when filled with hydrogen gas.

Answered by Mr. John Elliott, Lamesley.

Let x = the diameter of the ball, p = ·5236, the specific gravity of copper = 8·9, of common air = ·0012, and of hydrogen gas = ·0001, then

$$\text{Solidity of the ball} = p\,x^3$$

$$\text{,,}\quad \text{cavity} = p\,(x - \tfrac{1}{50})^3$$

$$\text{,,}\quad \text{shell} = p\left\{x^3 - (x - \tfrac{1}{50})^3\right\}$$

$$\text{Weight of displaced air in oz.} = 1{\cdot}2\,p\,x^3$$

$$\text{,,}\quad \text{copper} = 8900\,p\left\{x^3 - (x - \tfrac{1}{50})^3\right\}$$

$$\text{,,}\quad \text{hydrogen gas} = \tfrac{p}{10}\,(x - \tfrac{1}{50})^3$$

And, that the ball may merely float in air, we must evidently have

$$1{\cdot}2\,p\,x^3 = 8900\,p\left\{x^3 - (x - \tfrac{1}{50})^3\right\} + \tfrac{p}{10}\,(x - \tfrac{1}{50})^3$$

$$\text{or, } 8898{\cdot}8\,x^3 = 8899{\cdot}9\,(x - \tfrac{1}{50})^3$$

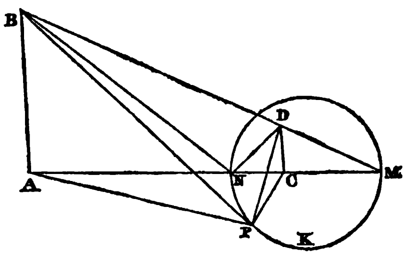
$$\therefore\ 20{\cdot}72258\,x = 20{\cdot}72343\,(x - \tfrac{1}{50})$$

$$\therefore\ x = 487 \text{ in. or } 40\tfrac{7}{12} \text{ ft. the diameter of the ball.}$$

QUES. 53.—*Proposed by Mr. Tate, Twickenham.*

There are two trees *a* and *b* feet high respectively, and *d* feet apart: what path must a person pursue so that they may always appear of the same magnitude. Determine also the position of the person when the trees appear of the greatest magnitude.

Answered by the Proposer.



Let A B and C D represent the two trees; N and M the two positions of the observer when situated on the line A C or A C produced; and P any other position: join P A, P B, P N, P D, P M, N B, N D, and M D B.

Because ∠ A N B = ∠ C N D, the triangles A N B and C N D are similar; in like manner, because ∠ A P B = ∠ C P D, the triangles A P B and C P D are similar;

$$\therefore\ AB : CD :: AN : CN \ldots (1)$$

$$\text{and } AB : CD :: AP : CP \ldots (2)$$

$$\therefore\ AP : CP :: AN : CN \ldots (3)$$

In like manner, from the similar triangles A B M and C D M, we have

$$AB : CD :: AM : CM \ldots (4),$$

but by proportion (2),

$$AB : CD :: AP : CP,$$

$$\therefore\ AP : CP :: AM : CM \ldots (5).$$

Now from proportion (1) it follows (Euclid, Book VI., Prop. 3) that the line P N bisects the angle A P C; and from proportion (5), that the line P M bisects the angle C P K*; that is,

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* The line P K or A P produced has been inadvertently omitted in the figure.

$$\angle NPC = \angle NPA,$$
$$\text{and } \angle MPC = \angle MPK,$$
$$\therefore \angle MPC + \angle NPC = \angle MPK + \angle NPA;$$

but A P K is a straight line,

$$\therefore \angle MPC + \angle NPC = \text{a right angle};$$

therefore, (Euclid, Book III. Prop. 31,) the locus of P is a circle, of which N M is the diameter.

To find the Diameter **N M.—Put $a = AB$, $b = CD$, and $d = AC$; then from proportion (1), we have by composition,**

$$AB + CD : CD :: AN + CN : CN$$
$$\therefore CN = \frac{CD \cdot AC}{AB + CD} = \frac{bd}{a + b};$$

similarly from proportion (4), we find

$$CM = \frac{CD \cdot AC}{AB - CD} = \frac{bd}{a - b};$$

therefore, by addition, we have

$$NM, \text{ or the diam.} = \frac{bd}{a+b} + \frac{bd}{a-b} = \frac{2abd}{a^2 - b^2}$$

To Find the Position of the Maximum Angle. **—When the angle A P B is a maximum, its tangent $\frac{AB}{AP}$ will also be a maximum. Now as A B is constant, $\frac{AB}{AP}$ will be a maximum when A P is a minimum, that is, when A P becomes A N; therefore N is the position of the observer when the angle is greatest.**

Mr. Rule, Mr. O'Clazey, and Mr. J. Elliott gave good analytical solutions of this problem.

LIST OF MATHEMATICAL ANSWERS.

Alpha, ans. 51; Alder, James, Worsley, ans. 51, 52; Allen, Andrew, Fordmoss, ans. 51, 52, 53; Brown, John, Liverpool, ans. 51; Beverley, ans. 53; Bower, W., Bridgnorth, ans. 51; Barnacle, G., Empingham, ans. 51, 52; Crompton, F. R., ans. 51, 52; Dyer, Samuel, Battersea, ans. 51, 52; Elsee, C., Henley-on-Thames, ans. 51, 53; Elliott, John, Lamesley, ans. 51, 52, 53; H. G. ans. 51; Nero, Berwick-on-Tweed, ans. 51, 52; O'Clazey, John, Shincliffe, Durham, ans. 51, 52, 53; P. H., Newcastle, ans. 51, 52; P. E., Lamesley, ans. 53; Prismord, Tewkesbury, ans. 51, 53; Rule, Geo., Whickham, ans. 51, 53; Royds, Emma, Hollingsworth, ans. 51, 52; Royds, Hollingsworth, ans. 53; Royds, James, Belfield, Rochdale, ans. 51, 52, 53; Rule, Thomas, Durham, ans. 51, 52, 53; Righton, Wm., Jun., Ripley, ans. 51; Righton, Wm., Ripley, ans. 52; Sothern, Thomas, Burtonwood, ans. 51, 52; Salter, John, Durham, ans. 51, 52, 53; Spooner, William, Rugby, ans. 51; Wilson, Thomas, Sabergham, ans. 51, 52, 53; W. M. T., ans. 52, 53.

NEW QUESTIONS,

To be answered in our Number for March, 1850.

Ques. 54.—*Proposed by J. H.*

A certain square pleasure-ground, containing 1¼ acre, has in its centre a circular sheet of water, covering 1 rood, 20 perches: find the length of the paths reaching from each of the angles to the water's edge.

Ques. 55.—*Proposed by Oswald, Fordmoss, Northumberland.*

Find two fractions whose sum is ¼, and product $1\frac{5}{12}$.

Ques. 56.—*Proposed by P. E., Lamesley.*

The locus of the points of intersection of all the tangents drawn to a given circle, and containing a given angle, is the circumference of a circle concentric with the given one. Determine the radius of this circle when the tangents intersect at an angle of 60°.

Intelligence.

Curious Comparison between the State of Education in Canada and New York.—The whole population of the state of New York is upwards of three millions; the whole population of Upper Canada may be set down at one-fifth of that of the state of New York. Now the amount of money raised by county assessment in the state of New York in 1847 was 275,000.00 dollars; while the amount raised in Upper Canada in the same way was 91,820.60 dollars, — *one-third* the amount raised in the state of New York, in the same way and for the same purpose.

Again, the amount paid in *rate-bills* for teachers' salaries in the state of New York for 1847 was 462,840.00 dollars; the amount paid in rate-bills in Upper Canada for the same purpose was 122,174.00 dollars,—more than *one-fourth* that of the state of New York.

Furthermore, the amount arising from the State School Fund and legislative appropriation in the New York state for 1847 was 275,000.00 dollars; the amount of legislative grant in Upper Canada for the same purpose was 84,000.00 dollars,—*nearly one-third* the amount granted in the neighbouring state, with a population more than five times that of Upper Canada.

The school system of Upper Canada has been in existence but *seven* years; that of the state of New York has been in operation *five* times *seven* years.

These facts are an appropriate reply to the attacks which have been made upon our present school system, and they cannot fail to be grateful to the feelings of every friend of general education in Upper Canada.

There is, however, one point of comparison in the Common School expenditures of the two countries, which must cause the deepest pain to every patriotic Canadian. In the state of New York, in 1847, the state appropriated 55,000.00 dollars, and the people raised, by local assessment, 38,000.00 dollars for *Common School Libraries;* while not a farthing has yet been appropriated by our legislature for the same object in Upper Canada; I hope, before the beginning of another year, we shall have reason to congratulate our country in this respect also, in comparison with that of our American neighbours.

EXAMINATION FOR THE BACHELOR'S DEGREE IN FRANCE.—The Government has followed up its initiative in the education question, of the abolition of the *certificat d' études*, by an appendant to that measure in the shape of new regulations for the examination for the Bachelor's degree, adopted in conformity with the deliberations of the Council of the University, recently held on that subject. It would have been, perhaps, not uninteresting to you, just as the new Oxford examination is again out, to have seen the regulations in full, but as they occupy seven or eight columns of the *Moniteur*, I can only send you some general notions of their contents. The French University is making a move directly in the opposite direction to ourselves; we, it appears, are extending, while they are contracting, the circle of their examinations; the present statute (if I may call it so) being intended "to reduce and simplify the programme hitherto in use." There cannot be much doubt as to what sort of men the present system of University education has produced in France; men, not only of unsound principles, but withal thoroughly inefficient in statesmanship and the higher walks of life, however they may distinguish themselves as geologists, chemists, or men of science. It is to be hoped Oxford will take warning and not receive a bias in the same direction; and yet the Modern History school display, *tant soit peu*, a tendency that way. The new regulations fix the age at which a candidate may present himself for examination at sixteen at the least. The subjects are threefold: Latin version, explanation of Greek, Latin, and French authors, and *vivâ voce*, or *questions orales*. For the Latin version, two hours are given, and dictionaries are allowed. The Greek authors consist of parts of Homer, Sophocles, Plato, Demosthenes, and Plutarch; the Latin, of parts of Virgil, Horace, Cicero, Tacitus, Sallust, and Livy; the French, of Corneille, Racine, Molière, Bossuet, Fénélon, Montesquieu, Voltaire (Charles XII.), and some others. The parts of each class of authors are divided into and marked with twenty numbers; these numbers are put into an urn, one is drawn out by the secretary of the examining board at each step of the examination, and the candidate is put on at that portion of the author marked by the number drawn. The *vivâ voce* examination is exceedingly diffuse in its subjects, and consists of *Literary Questions*, embracing Poetry and Eloquence, divided into twenty questions or headings, such as the principal forms of Latin and Greek verse—the division of Rhetoric—What are the general qualities of style? &c. *Questions in Philosophy*, embracing Metaphysics, Logic, Morals, and Theology, with thirty headings, such as — Of Ideas in general—Conscience—Judgment, &c.—The attributes of God—The destiny of Man—Immortality of the Soul, &c. *Questions in the History of Philosophy*, such as—Give an account of Socrates from the *Memorabilia*—Analyze the Baconian Philosophy of Method, Experience, and Induction. *Questions in Ancient and Modern History*, in *Middle Age and Modern History*, each with thirty headings, embracing all the principal events of each. *Questions in Geography*, physical and political, on a wide scale. *Questions in Mathematics and Cosmography*, including Arithmetic, Geometry, Algebra (to simple equations); and, lastly, *Questions in Physics and Chemistry*, elementary, of course. The same rule of drawing a number to decide upon what head of the subject the candidate is to be questioned is observed throughout all these divisions. The examination is to last three-quarters of an hour at the least, and to each successful candidate a certificate is to be given, marked with the words *très bien*, *bien*, or *assez bien*, to show how he has acquitted himself. This certificate is finally transmitted to the Minister of Public Instruction, and by him the diploma of Bachelor is conferred. Without seeing all the different questions or headings given on each subject (as a sort of guide, I presume, to the student of how deep he is expected to go into it), you will hardly be able, I fear, to form an accurate notion of the real strength of the test; but the number of subjects is not a little startling, when one considers that the candidate's age rarely exceeds that at which a man enters at Oxford, and the irresistible conclusion is that it must give rise to a system of cramming. Ample evidence of this is seen in the booksellers' shops of the *Quartier Latin*, in all of which you find numberless copies of a work entitled "Manual to the Baccalaureat," into which is crammed as much of the above subjects as a candidate is supposed to require. I believe all make use of it, for those subjects, at least, in which they take no interest or pleasure; in so diffuse an examination these must be numerous, and the whole of such time is, of course, utterly wasted, or worse.

The great evils of the Bachelor's degree in France seem to be, first, the diffuseness of the studies for it in boys of sixteen or seventeen; and, secondly, the universality of it, enacted as it is for almost all respectable callings. "The public education of France," says the *Revue des Deux Mondes*, "unclasses (*déclasse*) and displaces every body. The reform wanted is one which, while respecting democratic equality, will introduce into education principles of classification such as nature herself shows us." The *Presse* goes a good deal further; speaking of the abolition of the *certificat d'études*, it says in its quaint way, "Why not abolish the Baccalaureat as well? What purpose does it serve? To unclass the people, to impoverish families, to stimulate presumption, to obstruct the professions, to multiply mediocrities; it is the communism of intelligence: let primary instruction be extended indeed to all; but that the University should pass the same level over so many unequal intellects is what we cannot understand." The *Univers* quotes and approves the above, showing how nearly all parties agree on the subject.—*Guardian.*

NORMAL TRAINING INSTITUTION.—The usual examination of the students has taken place during the past week, and the reports of the examiners testify to their increased advancement, in both the religious and secular departments of study. The examination in Scripture, the Liturgy, and Ecclesiastical History, was conducted by the Rev. F. Close and the Theological Master of the Cheltenham College. It is truly difficult to over-estimate the fruits that may be anticipated from the diffusion over the land of persons thus carefully nurtured in the truths of the Gospel, and in a real and intelligent attachment to the Church. At the close of the half-year, presentations were made, and addresses delivered to the principal and vice-principal of the institution, in token of the affection and esteem in which they are held by the present or late students. The presentation to the principal consisted of a very handsome and complete set of robes, manufactured at Oxford; and that to the vice-principal, of a large and beautiful silver inkstand, with a suitable inscription. A collection of £5 was also handed in for the Church Missionary Society. We subjoin one of the addresses which accompanied the presentations:—

"*To the Reverend Charles Henry Bromby, Principal of the Cheltenham Church of England Training College.*

"DEAR AND REVEREND SIR,—We, the undersigned Members of the Committee appointed by the Students of the Cheltenham Church of England Training College for the purpose, do (on behalf of all the Students who are now, and have been connected with the Institution) desire respectfully to present to you, our beloved Principal and Pastor, a feeble token of our love and esteem.

"We are all desirous of offering to you our most grateful thanks for the kind instructions communicated by you to us, with so much zeal and ability, and only lament if there has not been on our part a corresponding energy and application. Our prayer and desire is, that our future labours may testify, that we have received sufficient at your hands to fit us for the efficient discharge of the important duties of that station of life to which it may please God to call us.

"Your kind and paternal affection has never been more manifest than on those occasions on which you have found it necessary to reprove, showing how much you had at heart our real welfare and best interests.

"The cheerful and ready manner in which the ex-students, both male and female, have responded to the call, and the high tone of affectionate feeling expressed towards you in their letters to our Treasurer, had you seen them, would, we are assured, have cheered your heart as it did ours.

"We trust that the choice made for the Presentation will not be deemed inappropriate. And when we consider your faithful ministrations, we cannot but thank God that it has been the happy lot of many of us, just leaving for the first time the habitations of those dear to us, to have been placed under the instructions of one whose zeal for the emancipation of the Soul from Nature's darkness, gives us the great privilege of hearing from Sabbath to Sabbath, and on other occasions, the 'glorious Gospel of the blessed God,' free from the mixture of unscriptural doctrines or other innovations of the age, and which alone 'maketh wise unto salvation.'

"May a gracious and loving God long continue to spare your most valuable life, both for the sake of dear Mrs. Bromby and your beloved children, and for the great and holy cause of God and his Church, that we and all who may be privileged to go out from this Institution may be encouraged to live consistent and godly lives, and show that our first zeal for the cause of Christ's little ones has not been slackened by our stay under your judicious and parental authority; but that the spark has been fanned into a flame, which shall enlighten future generations, do honour to the Institution over which you so eminently preside, and bring glory to the name of God through our Lord Jesus Christ.

"Wishing our kind Mr. Bodley, yourself, and family the compliments of the season,

"We beg to subscribe ourselves,
"Dear and Rev. Sir,
"Yours, most affectionately,

"JOHN WATERWORTH, *Treasurer.*
"THOMAS COLLINSON, *Secretary.*

Committee:

"WM. JOHN BULLOCK,
"JOHN HARRIS,
"WILLIAM MILLWARD,
"WILLIAM JAMES HAMBLING,
"J. H. GREEN,
"JOSEPH BIRD.

"P.S. It was intended to have presented the testimonial on the 19th inst., but hearing you were likely to leave Cheltenham next week, we resolved to seize the present opportunity. Dec. 15th, 1849."

The inscription on the inkstand presented to the Vice-principal was as follows:

PRESENTED TO
THOMAS BODLEY, ESQUIRE,
VICE-PRINCIPAL OF THE CHELTENHAM CHURCH
OF
ENGLAND TRAINING SCHOOL,
BY THE STUDENTS, AS A TOKEN OF THEIR
ESTEEM AND AFFECTION,
19th Dec. 1849.

To Correspondents.

ERRATA.—In the article on the Bradford Church of England Schoolmasters' Association, inserted in our last, were several typographical errors: for Dr. *Bromet*, read Burnet; for *national* philosophy, natural philosophy; and for *Cormon's* grammar, Connon's.

We beg to thank Mr. George Holmes and Mr. James Hill, for their valuable papers of "Solutions."

We recommend Mr. J. W. Sice to advertise in the journal, or to proceed to the Training College, Battersea, as a student, according to the new arrangements, for one or two terms.

W. J. M.—Under consideration.

Our best thanks are due to Wm. Waterworth. It will give us great pleasure to number him among our regular correspondents.

We have not room for E.'s earnest letter.

The Title-page and Index will be given in the next number.

BELGIUM AND ITS SCHOOLS.

TO THE EDITOR OF "THE ENGLISH JOURNAL OF EDUCATION."

(*Continued from page 47.*)

In the Jesuit college, to which I have just referred, the course of instruction combines ancient and modern languages,—that is, Latin, Greek, German, French, English, &c.—and mathematics, with the usual routine of a commercial education. I could not perceive that the teaching was distinguished by any important peculiarities of method. The Latin and Greek course is, comparatively speaking, perfunctory. Many of the parents, not to say most, belong to the mercantile classes, and, consequently, modern languages, arithmetic, bookkeeping, and practical mathematics, are chiefly in vogue among them. Whatever may be the private opinions of the accomplished conductors of the college on the abstract value of classical literature as a means for forming the taste and enriching the mind, and of the two great ancient languages in which that literature is contained, viewed, in relation to their grammatical construction, as instruments of mental discipline, they subordinate those opinions to the necessities of the times. To a Ghent cotton-spinner, corresponding with some merchant at Hamburgh, or relative in the Rhenish Provinces, German will be of far more value than Greek. To write Iambics, and imitate the Idylls of Theocritus, may be very charming to a man of leisure; but in a country like Belgium, everywhere teeming with a busy and active population, everywhere competing with still busier neighbours, even the Jesuit, if he means to teach the people, must submit himself, somewhat at least, to their instincts. And he does it with a good grace, knowing that the principles which it is his chief design to inculcate can be taught in other languages than the Latin, and that if Rome is to survive its troubles, it must make itself an asylum in the hearts of the merchants and manufacturers of the country: in other words, it must be the cherished system of the upper middle class.

* * * * *

Jan. 2nd. To-day I have visited an important elementary school, of which we have not any exact counterpart in England or Scotland. In some respects it is similar to the Circus Place school at Edinburgh. In others it reminds one of Sir Robert Peel's school at Tamworth. It is situated in the heart of the city of Brussels, and is called, from the name of its energetic

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[illegible] bring a certificate of good conduct, if they have [illegible] attended any other school. [illegible] are then admitted by the administrative commission, on the nomination of the director. In each place, the administrative commission fixes the age, beyond which children are not to be admitted or retained in the school. All the names are duly inscribed in a register by the director. In each place, the administrative commission determines, subject to the approbation of the Minister of the Interior, the amount of the school fees, and the mode of collecting them. A deduction is made in the case of military men, to the rank of captain inclusively. The school supplies warming, lighting, books, paper, pens, ink, &c., with the exception of the box of instruments required for each pupil who learns linear drawing and land-surveying. All the articles furnished by the school are considered to belong to it, and are kept there. Extras are made matter of special agreement, subject to the approbation of the Minister of the Interior. Free exhibitions are sometimes granted by the administrative committee, under the same restricting appeal to the Minister. These exhibitions are granted *de préférence* to the children of the teachers. They are always very few in number.

Corporal punishment is not allowed; nor any other, tending permanently to disgrace and discourage the pupils, or to excite the laughter or contempt of their fellows. It is by admonition and watchful care that the teachers are to repress or prevent faults. The parents are invited to visit the establishment as often as they conveniently can, and to act in concert with the teachers for the same purpose. They are expected to bring the domestic education of their children into harmony with that of the school. The children are not allowed to bring anything to school, except what they require in pursuing their studies. Those who interfere with the good order of the classes are placed, at due intervals, on a bench by themselves; and, if this punishment fails in producing the desired effect, they are confined in a separate room, under the charge of a master. For obstinacy, insolence, falsehood, and such-like faults, they are kept in after school-hours. Extra lessons are never given as a punishment. The idea of the discipline is, to measure the time lost in school by the idleness or ill-behaviour of the child; and to repair that loss by an equal length of time occupied in study out of school. I question if this system can be successful with most boys of the age and stamp that I saw in the large school of Mr. Peters. They appeared to me to require a discipline much more stringent and exacting. If these reprimands and moderate punishments fail, the parent is requested by the director to remove his child, until he has shown signs of amendment. The director makes a formal report of this suspension to the administrative committee. In case this arrangement again produces no good result, the director, as a final resort, makes a second report to the administrative committee, who determine whether the child shall be temporarily removed from the school, or finally and definitively expelled.

(*To be continued.*)

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL.

No. 2.

LETTER WRITING.

THERE is a boy in my first class who has made as much as fourteenpence a week by writing "begging letters" for his neighbours; for which he charged one penny apiece; and he also receives a few coppers now and then from the costermongers, who employ him to conduct their business correspondence. So low is his moral tone, that I am sure he can only be persuaded to abandon the "begging letter" department of his profession by pointing out to him that it is quite beneath a person of his good sense to tell lies for any consideration whatever; and that his acquirements are of so high an order, that the smallest of his inventions demands an amount of remuneration which the capital of his employers is altogether inadequate to meet.

An attempt was made, a day or two ago, to enlist my own services in this business; and whilst negotiating the preliminary arrangements, I managed to get a sufficient insight into the scheme to convince me that the benevolent and charitably disposed will do well, as a general rule, to take no notice of such appeals. Let any one who feels disposed to relieve the distressed place himself in communication with the clergyman of the parish, or the curate, or the parish doctor, or the district visitor (when that office is not filled by a lady amateur, who is herself as likely to be duped as any one), and if the claimants are legitimate objects on which to bestow charity, the parties referred to are sure to be acquainted with all particulars respecting them. In this strain did one of my neighbours dictate a "line" to me, by which she meant a "begging letter:"—"Say that I am an *honest* woman,—but what can people do at this season?—and that my husband has been in Ireland for *two years* (her personal appearance was a contradiction to one of these assertions), and that I am very ill off, and that he may send his butler to see if he likes." Suppose this letter had been sent to the benevolent and well-known gentleman to whom I was requested to write, and that he had sent his butler to visit the domicile of the applicant, what wiser would he have been? The appearance of any one of the hundreds of rooms in our neighbourhood would shock any footman, and probably send him back to his master breathless with astonishment and sorrow. . . . My scholars have quite made up their minds that a letter is a written request for something. When I ask them what a letter is,—"A man wants oranges," says one, "and he sends a letter to another man for them." Again—"Please, sir, a poor woman writes to a rich gentleman over the park, to say she is in distress, and wants some money." Or,—"When Mrs. Bryan saved thirty shillings, she sent it over to Ireland, to ask them to send her little Billy and his sister." . . . . The ties of family and kindred amongst these people are, I regret to say, becoming gradually lessened as they stay in England. It is not for me to say how much the English Poor-Law has had to do in thus destroying a marked peculiarity of the Celtic race; but that it has had the effect of weakening the bonds which blood relations of that people have for ages cherished, is a fact worthy the consideration of the intelligent inquirer. The English Poor-Law is an institution adapted to a laborious and plodding people in a high state of civilization; but, when you open the gates of the workhouse to a semi-barbarous race, the Saxon pauper is obliged to live on Celtic broth, and not on Saxon fare, to which he is entitled. Nor is the Celt improved by this succour and relief; for, if you once touch his self-respect, and sever him from his family, his manhood is destroyed, and thereby the state loses a man and gains a pauper. Irishmen, in Scotland and in America, are much more industrious than they are in England. Why? . . . .

When the workhouse official once takes a share in the administration of the Irish family affairs, the poor Irishman forgets that he is under any obligations to his kindred or society; his very religion becomes a kind of dead letter, and the potency of the priest vanishes before the steam of the soup-kitchen. . . . . I did what I could to convince my pupils that people learned to write for other and far different purposes then merely to be enabled to pen their own begging letters; and I at last satisfied myself that I had gained the point in view,—with what success may be judged of by the characteristic epistle, which is subjoined. It was written to me in answer to an injunction, chalked on the black board, to this effect:—

"First class.—Write a short letter to the master on any subject you like."

The following is an exact copy of one of the answers I received:—

"If you please I want a pair of Boots and pair of stockings and Trousers and Cap and coat and a little more Learning and then I Want A situation as errand boy or Footman or I would like to go to sea. And if I could get there I would be very thankful. For I would wish to be out of this place As soon as possible and more particular I wants a Pair of Boots than anything else. And if I had these things I would not Ask for no more. And I would be obliged to any one who would get me to sea. So no more at present from

"PATRICK O'BRIEN."

AN IRISH FUNERAL.

Of all the "sights" of London none has ever affected me so much as the sight of an humble funeral. I do not mean a pauper funeral: but that more interesting sight to all who think—the funeral of the toil-worn artisan, or of the aged semstress, bred, perhaps, in comfort and independence, whereby a certain spirit was begotten that enabled her to struggle, like a true heroine, against her lot of loneliness and penury. How easy to trace the appearance of these sad, and, to all Londoners who toil, disheartening sights, peculiarly and exclusively Saxon as they are. The sturdy arm whose industry never flagged, urged as it was by a courage that yielded not to exhausting labour, is now lifeless and coffined. Where are the mourners? Those three lonely women, the aged widow and daughters of the dead, already are they past the prime of womanhood, with nought for their dowry but their Saxon application, their needles, and their father's good name. There is something very cold and friendless in all this, yet it is the one extreme of a great system which has made a nation whose power exists in the individual exertion of its members, and, pity it is, that their merits are too often tested by a merely money value. Amongst the Saxons the moneyless are often also the friendless: not so with the Celts; and one almost begrudges them the finer feelings which they manifest, and the kindliness which they show towards each other in all times of trouble, were it not that the conviction is as often forced on us, as often as these displays are manifested, that this exhibition of feeling is a mere ebullition, and is swept along like a flimsy cloud before the gale of life. . . . . The old saying, that a sudden death makes an interesting funeral, has just been illustrated in our court. One of our neighbours, an honest Irish labourer, fell from a scaffold and was killed; the body was brought to his room to receive that homage which the usages of the people deem requisite, and the funeral took place to-day. His room was on the third floor of the lodging, and it would appear that the stairs are so contracted or rickety that it was deemed advisable to take the coffin out by the window, and slide it down on ladders to the court below; a mode of procedure which caused much excitement in the locality. Nearly three hundred people were assembled to witness this spectacle, and I must say that the whole business was transacted with much care and decorum; the frail ladders creaked and bent again under the load; but not a whisper escaped from the crowd; they stood gazing on the scene with the utmost intensity; when the coffin was safely placed on the shoulders of the bearers, that peculiar sound of breath-taking was perceptible which is often heard in a crowded assembly when a brilliant speaker has paused, but nothing more than this was heard, and then the procession moved slowly up the court, followed by the spectators in the most solemn and becoming manner. People who are capable of being so influenced are surely within the bounds of discipline and improvement; but it is difficult to find the road to their hearts, and, as to their reason, that is so much warped by their confessors, and so obtuse are they from want of education, and so much exposed to deteriorating example, and so much the slaves, as it were, of mental stagnation, that it bewilders one to see the end of all our teaching.

PASTIMES.

These Anglo-Irish are inveterate gamblers; boys and men are alike addicted to this vice; they settle their disputes by "tossing up," and, when they fight, it is as much for the love of the thing itself as for taking a short way of ending a quarrel. I have seen bands of boys employed for hours in games of chance, which could have no attractions for strong, buoyant youths; but these children are old men in habits—such is the effect of hardship on childhood. They take no delight in exercise; they much prefer lounging about from street to street, and now and then they come to a stand by some corner or sunny place, and indulge themselves with a game at "buttons." I have often spoken to them about this aimless, crawling-about kind of way of spending time; and of their habit of incessantly talking, which is another peculiarity of theirs. One of them assured me that their idleness was merely apparent, or, as he expressed himself, "We be looking sometimes for what ain't lost." Give them but an old pipe to suck, and they will sit for hours listless and inactive; in these respects they resemble the North American Indians, but they lack their solemnity and reserve. They also do things by a kind of impulse, which it is difficult to describe. Crossing-sweeping at one time is all the fashion; at another, probably a dozen are seized with a laudable desire to make lucifer match-boxes; then a large party become impressed with the necessity of being forthwith provided with shoes, or they all wish to go to sea in the same week; or to be provided with places where liveries are worn: they have no fixedness of purpose, or ideas of individual application or exertion. Apart from their wit, they have very little or no originality of thought, and, with a little management, are easily led. It is not difficult to be popular with them either, but they are so unstable that no dependence is to be placed on one's influence over them, even when that has been gained to a certain degree. Sometimes our school is so full that we are at a loss to find seats for our scholars, and then for a week or two we have several empty benches, until, for reasons which are beyond our ken, the tide turns in our favour, and the benches are once more filled. . . . . The men amuse themselves and waste much time at card-playing; and, when an interesting game is going on in any of their rooms, the neighbours crowd in and look on. Last Saturday evening, at twelve o'clock, when the public-house was shut up, some of them were expelled in the midst of a disputed game; they immediately adjourned to the room of one of those engaged and renewed the contest, which lasted from that hour until Monday morning, when I saw the party breaking up. Thus they played from Saturday night until Monday morning; and the loser, a man from Whitechapel, left the court minus sixteen shillings, which fact was the general subject of conversation in the neighbourhood, and seemed to be thought, as it really was, the great event of the day.

IRISH IMMIGRATION.

The greatest punishment which can be inflicted on an Irishman is to send him back to his own country. He dreads a removal by the parish authorities; and when he is summoned to appear before a board of guardians, you would suppose that he had received a private communication from the ministers of the Inquisition. I have known several cases where claimants for relief were silenced by an intimation from the poorhouse official that they could be " passed home." Hard is the lot of the wretched people so situated : placed like Æsop's bat between two natures, as it were, they shrink from their own country and kindred with horror ; and the Saxon is not willing to acknowledge them as men and brethren. The Irish immigrant suffers most in England when he is *enduring* to obtain a settlement or parochial relief; and I find that there is a general impression amongst those with whom I have come in contact that America is not so good a market for labour as London, and that Australia is out of the world ; but they do not want a place to find work in,—their only ambition is to *live* by the least possible exertion. They have an idea that America " is no good ;" and they have told me that it is " a very *cold* and a very *dark* country," and altogether they seem satisfied that London is as good a place for poor Irishmen as can be found. . . . . I have four children in my school, members of the same family ; and, when they first became known to me, they had been only twelve weeks in England. Their father was a small farmer near a country town in the west of Ireland ; he farmed ten acres of land, and kept seven cows ; the landlord wished to get rid of his small farmers, and several of them were ejected ; amongst the rest, the person to whom I allude. Six families were thrown on the world by this *improvement*,—five of them were so poor that they could not leave Ireland, and they now subsist on the " bread " which the " gentlemen allow." The sixth is the family whose movements I wish to trace. They had money enough to pay the expenses of the voyage to America, but they preferred London, although the land journey and voyage hither would cost more money than the voyage to America ; so they travelled by land to Cork, and from thence by steamer to Plymouth, where they made some stay, and at last they landed safely at London Bridge. Their next step was to take a room in Whitechapel, where they lived for five weeks, and at the end of that time they were penniless : and now they bid fair to settle themselves on a certain London parish, if we do not succeed in giving the children a better spirit ; and, if possible, in rousing them to a sense of their true position, and in teaching them, if we can, to help themselves.

I had a curious offer from another party lately imported, who wished to enter into an agreement with me of a peculiar kind ; but as it involved a sham conversion and the rejection of the creed of the church of Rome, on grounds altogether secular, I thought it best to drop the matter quietly. How can one talk of honesty or Christian principle to an ignorant man who is both lazy and hungry ?

LODGING-HOUSES.

A favourite occupation amongst these Irish is lodging-house-keeping ; it may be that they only imitate other suburban residents in this respect, yet they have a facility of entering on the business which would surprise most people in the same trade. The party desirous of procuring Anglo-Irish lodgers has no occasion to provide furniture of any kind; that would cost money, and the articles would occupy some space, which is valuable in a small room: nor is he under the necessity of advertising in an expensive way; he has only to make up his mind that the *rint* has to be paid by lodgers, and his neighbours being made acquainted with the decision, the fact is soon known throughout the court. The father of one of my scholars is devoted to this trade; I have known him to have five young women lodgers at the same time; at present he has but three, and suffers much in consequence, as he assured me yesterday. His accommodation consists of one small room, about twelve feet square, and the only furniture in it is a rather narrow truckle-bed; at night the floor is covered with shavings in bags, or spread about, and the sleepers manage as they best can. During the late frosts they subscribed to keep a fire up all night, which made it "jolly," as one of them told me, who sometimes comes into our school when she has nothing else to do. Each of these girls pays sixpence a week for her lodging, and by this means the family which shelters them lives rent free. Now in this small room, two or three weeks ago, there slept nightly ten persons:—a grandfather, a husband and wife, and their two children besides five young women who were not related to the family or to each other. At present the lodgers are reduced to three in number. These girls are not what the world calls "bad women;" they are women who do not value virtue or decency, because they have very confused notions of what constitutes virtue and decency; they are not street-walkers, nor do they live by prostitution. . . . . I cannot speak more plainly on this subject for obvious reasons; but I again repeat what I have before stated in this diary, and what I have had occasion to bring very often before influential parties who seemed anxious to remedy the evil, that such lodging-houses ought to be put under the control of the police, by some municipal act passed for the purpose. I have been describing what may be called a private lodging-house; there are many others of a like kind, but some are of a more public character, having pretensions to be hotels in a small way. Take, for instance, one which boasts of two rooms and nine beds, that are let out nightly to all sorts of people in the most indiscriminate manner; neither age, sex, nor relationship being respected. Half the victims of poverty and crime are the victims of bad example, and of that contamination which results from men and women being levelled to the status of beasts. . . . . Perhaps the most respectable factory girls in the world are those of Lowell in the United States; they are exceedingly well-behaved in public, and their private character is good; every writer on the subject speaks well of their intelligence and *honesty*, although some may joke at their literary productions; but I have alluded to them here in consequence of a remark respecting them made to me by an American gentleman: "GREAT CARE," said he, "IS TAKEN TO HAVE THEM PROVIDED WITH GOOD SEPARATE SLEEPING-ROOMS."

GEOGRAPHY OF PALESTINE.

No. V.

(*Continued from page* 52.)

From the territory assigned to Zebulun we pass southward into the inheritance of Issachar, a tribe concerning which Jacob prophetically said, " Issachar is a strong ass couching down between two burdens: and he saw that rest was good, and the land that it was pleasant; and bowed his shoulder to bear, and became a servant unto tribute." In this description are probably intimated a disinclination to war, and a preference for the pursuits of husbandry; the tribute may denote the purchase of exemption from military service. We may presume that patient industry was characteristic of this tribe, and that their fertile territory contributing of its superabundance to the tribes north and south of it, interprets the metaphor of the " strong ass couching down between two burdens." The beautiful and richly productive plain of Esdraelon belonged to the tribe of Issachar; and that plain was the granary of Palestine. Encouraged, however, as the men of Issachar were, by the nature of their land, to devote themselves with special eagerness to agricultural pursuits, we do not find that they were devoid of patriotic passion, or political sagacity. On the contrary, "the princes of Issachar were with Deborah" in the battle against Jabin, when others " abode among the sheepfolds to hear the bleatings of flocks;" and, in the days of agitation concerning David's accession to the throne of Israel, " the children of Issachar had understanding of the times, to know what Israel ought to do."

The principal towns and villages in the region of Issachar were Jezreel, Shunem, Nain, and Endor.

Jezreel was made a court residence by some of the kings of Israel, although Samaria was capital of the kingdom. Zerin, its modern representative, is on a rocky eminence at the head of the proper valley of Jezreel, which is an upward entrance from the plain of Jordan to the great plain of Jezreel, or Esdraelon. The town of Jezreel, therefore, commanded a noble prospect, especially eastward, down the vale of Jezreel, between the heights of Gilboa and the Little Hermon; and westward, along the great plain to the ridge of Carmel. But it was grievously disgraced by the wickedness of the house of Ahab, king of Israel. Here that impious monarch and his equally impious queen, Jezebel, perpetrated the iniquity of murdering Naboth the Jezreelite, for the sake of enlarging the palace-grounds by his contiguous inheritance. Here the intrepid prophet confronted the guilty king in the blood-stained vineyard, and predicted that dogs should lick the blood of Ahab in the same plot of ground. And here, accordingly, did Jehu execute the vengeance of heaven against Ahab, Jezebel, and Jehoram, and all the house of Israel's most unrighteous sovereign.

From Carmel, across the great plain eastward to Jezreel, was the journey of Ahab, when, warned by Elijah of the great rain, he sped homeward in his chariot. Nature still clothes the scene with beauty and fertility; but, for the ancient magnificence of the town of Jezreel, we have now about twenty humble dwellings, for the most part in a state of ruin.

Towards the southern limits of the tribe of Issachar was situated the town of Shunem. Its site is not well identified; but its name endures in the interesting narrative of the Shunammite woman, whose house was an occasional residence of the prophet Elisha. The mountain range of Carmel is unremoved; and the vale of Megiddo still teems with verdure, and feeds with its surplus moisture that ancient river—the river Kishon, which in return cheers with glistening looks the bosom of the great plain; but the eye of history discerns no trace of home or grave pertaining to the child who died and lived again. Such uncertainty, however, even enhances the sacredness of many portions of Israel's land, and prompts the traveller everywhere to reflect that his feet may be treading on dust that shall one day become for a human soul a glorious and imperishable body.

Not far from Shunem was another scene of temporal resurrection—Nain; the city at whose gate the Redeemer arrested the funeral procession, and commanded the human spirit that walked in the valley of death's shadow to return to its tabernacle of flesh, and fill with joy the heart of a widowed mother. This town is mentioned only in the New Testament, and its site is now recognised in the little village of Nein, about three miles south-west of Mount Tabor.

Not far from Nain was Endor, a town whose name now attaches to a village four miles south from Tabor, and which is probably the modern representative of the ancient town. It is principally remarkable as the place where Saul consulted the sorceress on the eve of his last battle with the Philistines, and was informed by an apparition that on the day following he and his sons should perish.

We now pass to the region of Samaria, between which and Galilee the Carmel hills and their eastward continuation form nearly the line of separation.

The half tribe of Manasseh possessed some territory on the east as well as on the west of Issachar; and Scripture seems to intimate that even the town of Endor belonged to it. Manasseh never rose to any distinction among the tribes of Israel; and that portion of it which lay in Palestine Proper contained few towns of importance. The "ten thousands of Ephraim," rather than the "thousands of Manasseh," seemed to have realized the greatness predicted for Joseph's posterity by Jacob and Moses. (Deut. xxxiii. 17.)

The principal towns in western Manasseh were Bethshan, Dothan, and Tirzah. The sites of the two latter have not been distinctly ascertained; nor is there anything historically remarkable in connection with these towns, except that Dothan was the place where Joseph was sold by his brethren, and that Tirzah was made by Jeroboam the capital of the kingdom of Israel, and continued to be so until Omri built Samaria.

Bethshan, now called Beisan, was situated in a valley between the Jordan and the hills of Gilboa. Its classical name, Scythopolis (the Scythians' town), is supposed to have been occasioned by the settlement of some Scythians here, in the time of Josiah, on their passage through

Palestine towards Egypt. That descendants of Scythian immigrants thus resided in Palestine, and, of course, were regarded by the Jews as an unhallowed progeny, may serve to explain the association of the name "Scythian" with those of "Jew" and "Greek" in St. Paul's reference to the universality of the Christian scheme. (Col. iii. 11.)

The dead body of Saul, when found on Gilboa by the Philistines, was beheaded and fastened to the wall of Bethshan, until the valiant men of Jabesh-Gilead came across the Jordan to rescue it for honourable sepulture.

Beisan is situated at the foot of the vale of Jezreel, and is of mean appearance and small extent, being inhabited by a few Moslem families of ungenerous and disorderly habits. Among the ruins of the ancient city are a large theatre, several tombs containing sarcophagi, and traces of a line of wall surrounding the summit of a hill that formed the acropolis of Bethshan.

The next tribal division, south of Manasseh, is that of Ephraim, which in Israel's most prosperous days was inferior in importance only to Judah, and which indeed possessed political influence so great, as to occasion that rivalry to which prophecy refers in the words, "Ephraim shall not envy Judah, and Judah shall not vex Ephraim." (Isa. xi. 13.) The chief towns in Ephraim were Shechem, Samaria, and Shiloh.

Shechem is a very ancient town, and appears to have been built, or rapidly extended, in a few years after the first arrival of Abraham at the spot called simply "the place of Shechem." It was situated in a fine fertile valley between the hills Ebal and Gerizim, and became one of the cities of refuge as well as a Levitical town. Here Jeroboam first established the seat of Israelitish sovereignty, until the attractiveness of Tirzah induced him to remove his court to the latter place. The circumstance, however, that on Mount Gerizim the Samaritan Temple was erected, secured for Shechem a lasting celebrity. In New Testament times it was called by the Jews Sychar, and by the Romans Neapolis, a name which is still represented in the modern appellation, Nablous or Naplous. Upwards of a hundred of the present inhabitants of Shechem profess the religious persuasion of the ancient Samaritans,—recognising the Samaritan Pentateuch, or Five Books of Moses, as the whole extent of authoritative revelation. Shechem is now one of the largest and finest towns in Palestine, with a population upwards of eight thousand.

About seven miles north-west of Shechem stood Samaria, now called Sebustieh, a city founded by king Omri, and made by him the capital of the kingdom of Israel. After several vicissitudes of fortune, it was much extended and embellished by Herod the Great, who conferred on it the name Sebaste, in honour of the Roman emperor, as Sebaste is the Greek translation of the Latin epithet Augustus. The modern village is on a hill and surrounded by olive groves; and many ruins of apparently Herodian edifices are found isolated amidst ploughed fields, or built into the walls of Moslem dwellings.

Although Samaria (deriving its name from Shemer, the proprietor of the hill which Omri purchased for the site of Israel's capital,) gave the name to a large district of central Palestine: it was not the chief seat of the Samaritans as a religious sect; Shechem had that pre-eminence, and incurred, accordingly, the greatest share of Jewish disapproval,—a circumstance which renders more remarkable the distinction which the men of Sychar obtained, when the Redeemer pointed them out to his disciples as a harvest for ministerial labour, and waited to instruct them in the doctrines of eternal life. Samaria, as to its religious history, was chiefly distinguished for the idolatries there encouraged by the wicked monarchs who successively wielded a sceptre of retribution over the ten revolted tribes.

Shiloh, the only other city of the Ephraimites which we shall notice, was the place where the tabernacle was set up in the time of Joshua. The envy of the Ephraimites against the tribe of Judah was at its height when the ark of God was by David transferred to Jerusalem; and although the vigorous measures of that monarch tended to repress any attempt at rebellion on the part of the men of Ephraim, this alienation of the sacerdotal dignity from Shiloh was the circumstance that mainly prompted the preparations for a revolt, which, in the days of Rehoboam, rent from the house of David ten of the Hebrew tribes, and originated the monarchical distinction of the lines of Israel and Judah. No traces of the town of Shiloh now remain.

GENERAL EXAMINATION OF TRAINING SCHOOLS.

CHRISTMAS, 1849.

XI.—SCRIPTURE HISTORY.

SECTION I.

1. WHAT events recorded in Holy Scripture are connected with the following places—Luz, Hebron, Mahanaim?

2. Quote passages from Scripture declaratory of the readiness of God to hear prayer. Give examples.

3. Mention instances in Scripture—of counterfeit virtues—of conduct that seemed right, but did not proceed from right motives—of false repentance and zeal—of persons who either by what they did or said seemed to be influenced by right feeling, but afterwards turned aside.

SECTION II.

1. What prophets flourished before, and what after the captivity?

2. Quote prophecies which have reference to Tyre, Egypt, and Edom: show how they have been fulfilled.

3. Mention prophecies which have reference—1. To the pre-existence and divinity of our Lord. 2. To his family and lineage. 3. To his perfect holiness. 4. To his miraculous powers. 5. To the events which followed his resurrection and ascension.

SECTION III.

1. Mention instances of our Lord giving an improving turn to events and circumstances around him.

2. What proofs are there in the Epistle to the Hebrews of the divinity of Christ?

3. Give an account of St. Paul's last journey to Jerusalem, of the occurrences there, and of his journey to Rome.

SECTION IV.

Explain any two of the following passages, giving the context in which they occur:—

1. Make to yourselves friends of the mammon of unrighteousness, that, when ye fail, they may receive you into everlasting habitations.

2. Salt is good; but if the salt have lost his savour, wherewith will ye season it?

3. No man, having drunk old wine, straightway desireth new; for he saith, the old is better.

4. What went ye out into the wilderness to see? A reed shaken with the wind?

5. A bruised reed shall he not break, and smoking flax shall he not quench, till he send forth judgment unto victory.

SECTION V.

1. Mention the occasions on which our Lord healed the sick on the Sabbath-day.

2. What kinds of tribute are mentioned in the Gospels, and what judgment did our Lord give as to the payment of each?

3. When did our Lord first warn his disciples of his coming crucifixion? Narrate the circumstances at length.

XII.—HISTORY.

SECTION I.

1. Who were the "Sea Kings" mentioned in the early history of England? When, and in what part of this country did they first make their appearance? At what time, and to what extent did they gain a footing in it?

2. Name, as exactly as you are able, the present counties contained in each kingdom of the Heptarchy, with the circumstances of its union under Egbert.

3. What effects does the character of Edward the Confessor appear to have had on the destinies of England?

4. Contrast a Saxon and a Norman noble in dress, manners, home, and habits of life.

SECTION II.

1. State accurately the circumstances which led to the accession of Henry IV., with dates.

2. What political and moral results followed the battle of Bosworth field?

3. Show, by the character and circumstances of the reigning Sovereigns, the peculiar providence of God in bringing about the Reformation in this country.

4. State in what remarkable respect the civil wars of the Roses differed from those under the Stuarts, and show, in one or two points, what effect this difference has produced on the liberties of the English people.

SECTION III.

1. The royal family of Stuart has been called "most unfortunate." Give some instances of its misfortunes, and show how frequently they proceeded from its misconduct.

2. Institute a brief comparison between Richard II. and Richard Cromwell.

3. Give a short account of the trial of the Bishops in the reign of James II.

4. Mention some physical circumstances, both of the country and its inhabitants, which have greatly contributed to the naval excellence of Great Britain.

SECTION IV.

1. In what important point was the succession to the throne limited at the accession of the house of Hanover? What was the cause of this limitation?

2. Mention some of the chief characteristics of an English parliament under the Plantagenets, the Tudors, and the Stuarts.

3. In what reigns have the greatest efforts been made to educate the people of England, and in what manner? Give instances. Do they seem to be connected with any great religious movements?

4. Name the principal epochs in the history of the English constitution, specifying, as far as you are able, the peculiar growth of each period.

SECTION V.

1. From whom did the Carlovingian line of French kings take its name? At what period, and under what peculiar tenure did its first king obtain the crown?

2. Who were the contending parties at the battle of Morat? What was the result of the combat, and what changes did it contribute to produce in the neighbouring states of Europe?

3. Contrast Charles V. with Francis I. and Henry VIII.

SECTION VI.

1. Mention briefly some of the circumstances of the reformation in Germany, France, and Switzerland.

2. What matrimonial alliances (completed or contemplated) between the crowns of England and Spain seem to have been prejudicial to the best interests of our country?

3. Describe the position of the chief powers of Europe in the year 1812.

SECTION VII.

1. Mention some of the chief points of difference in the republics of Sparta and Athens.

2. Give a short history of Cyrus the Great.

3. Under what circumstances of the Roman people were consuls, tribunes of the people, and decemvirs first appointed? Give the dates of each.

4. When and by whom was Carthage destroyed? What effect had its destruction upon its conquerors?

5. Mention, in order, the chief historians of Greece and Rome, with a brief notice of the general character of their works.

XIII.—GEOGRAPHY.

Section I.

1. What is the exact shape of the earth? How is that form to be accounted for? How is it proved?

2. Explain the changes of day and night, as they appear to us, and the causes of the alteration in this length throughout the year.

3. Describe the effect of the earth's motion upon the currents of the atmosphere and ocean.

Section II.

1. Draw a map of England, inserting the counties and chief towns.

2. Draw a map of Great Britain, showing the direction of the mountain ranges, and of the rivers, and marking the chief manufacturing towns and seaports.

3. Draw a map of the British Isles, marking the extent of the coal-fields, the heights, mountain ranges, and the population of the chief towns.

Section III.

1. Describe the physical features, climate, and general condition of Palestine in the time of our Lord.

2. Name the cities in Greece and Asia Minor visited by St. Paul, and describe any two which you may select.

3. Describe the cities of Cæsarea, Antioch, Damascus, and Alexandria, as they existed in the time of our Lord, and compare that description with their present condition.

Section IV.

1. Describe the use of mountains in the economy of nature. How are mountains generally classed? Which are the most remarkable insulated mountains in the world?

2. Give some account of the principal plains of Europe, and the table-lands of Asia.

3. Describe the Sahara, and name the principal deserts of Asia.

4. What are the chief causes which determine physical climate?

5. Give an account of the different species of clouds, and of the relative quantities of rain that fall in Europe in the different seasons.

XIV.—SCHOOL MANAGEMENT, AND NOTES OF A LESSON.

Section I.—General Questions.

1. In what respects, chiefly, do schools in manufacturing districts

differ from those in agricultural, and schools in towns from those in villages of the same district? What peculiar arrangements do you conceive necessary for each?

2. What is your opinion as to the advantages or disadvantages of "mixed schools" (of boys and girls)? How should you organize such schools, and arrange the children when saying their lessons, and when seated? Give your reasons plainly but concisely.

3. Describe a "good school-room"—particularizing its aspect, size, shape, means of ventilation and warming; furniture, apparatus, and internal arrangements.

SECTION II.—ORGANIZATION, DISCIPLINE, METHOD.

1. State, briefly, what steps you would take in opening a new school, or in undertaking an old one—divided, as was not uncommon, into ten or twelve classes.

2. What parts of school-management do you conceive to be included in the term "discipline"? To what chief causes do you attribute "want of discipline"? How should you attempt to remedy such an evil?

3. What register-books do you conceive to be necessary, in order that the condition and circumstances of a school may be accurately known—(1st) to the master—(2nd) to the managers—(3rd) to the public, by means of special and statistical reports? Give your reasons.

SECTION III.—SCHOOL-WORK.

1. State, at length, your method of teaching young children to read.

2. Is it desirable, under the present circumstances of schools, that the children should read poetry? Give your reasons for or against this exercise; and if favourable to it, state what authors you prefer.

SECTION IV.

1. What arrangement of desks do you consider the best for instruction in writing? Give your reasons.

2. Describe a lesson in simple subtraction to a junior class.

3. State your method of giving a lesson in dictation to young children. Should you always make use of a book? What sort of book should you use?

4. For what lessons, and to what extent, would you make use of the "black-board"? Give an instance in a geography lesson.

SECTION V.—PUPIL TEACHERS.

1. At what time of the day would you give your pupil teachers their private instruction of 1½ hour? State your reasons.

2. State, plainly, what duties you would allot to pupil teachers in your school, for what length of time you would intrust a class to each, and why?

3. In a school where pupil teachers are apprenticed, what are the chief benefits to be expected, and what the chief evils to be guarded against, by the master, as well as the apprentices?

SECTION VI.—NOTES OF A LESSON.

1. What obvious points of difference are there between a collective-lesson and a class-lesson? Mention them, and illustrate your answer by notes of a lesson (of each kind) on the "birth of our blessed Saviour."

2. Give the notes of a lesson to your pupil teachers, in the last year of their apprenticeship, on "prosody," making quotations at length from approved authors.

3. What do you understand by the expression, "Notes of a lesson?" What is their object and use? State the principle on which they should be arranged, and show it practically in the notes of an object-lesson on cloth.

EARLY EDUCATION.

"OF course, sir, you will soon begin to educate your son yourself?" said Mr. Squills.

"Of course, sir," said my father, "you have read Martinus Scriblerus?"

"I don't understand you, Mr. Caxton."

"Then you have *not* read Martinus Scriblerus, Mr. Squills!"

"Consider that I have read it; and what then?"

"Why, then, Squills," said my father, familiarly, "you would know that though a scholar is often a fool, he is never a fool so supreme, so superlative, as when he is defacing the first unsullied page of the human history, by entering into it the commonplaces of his own pedantry. A scholar, sir—at least, one like me—is, of all persons, the most unfit to teach young children. A mother, sir,—a simple, natural, loving mother,—is the infant's true guide to knowledge."

"Egad, Mr. Caxton, in spite of Helvetius, whom you quoted the night the boy was born—egad, I believe you are right!"

"I am sure of it," said my father; "at least, as sure as a poor mortal can be of any thing. I agree with Helvetius, the child should be educated from its birth. But how?—there is the rub; send him to school forthwith! Certainly, he is at school already, with the two great principles—nature and love. Observe, that childhood and genius have the same master-organ in common—inquisitiveness. Let childhood have its way, and as it began where genius begins, it may find what genius finds. A certain Greek writer tells us of some man, who, in order to save his bees a troublesome flight to Hymettus, cut their wings, and placed before them the finest flowers he could select. The poor bees made no honey. Now, sir, if I were to teach my boy, I should be cutting his wings and giving him the flowers he should find himself. Let us leave Nature alone for the present, and Nature's loving proxy, the watchful mother."

Therewith my father pointed to his heir, sprawling on the grass and plucking daisies on the lawn; while the young mother's voice rose merrily, laughing at the child's glee.

"I shall make but a poor bill out of your nursery, I see," said Mr. Squills.

Agreeably to these doctrines, strange in so learned a father, I thrived and flourished, and learned to spell, and make pothooks, under the joint care of my mother and Dame Primmins. This last was one of an old race fast dying away—the race of old faithful servants—the race of old tale-telling nurses. She had reared my mother before me; but her affection put out new flowers for the new generation. She was a Devonshire woman—and Devonshire women, especially those who have passed their youth near the sea-coast, are generally superstitious. She had a wonderful budget of fables. Before I was six years old, I was erudite in that primitive literature, in which the legends of all nations are traced to a common foundation. *Puss in Boots, Tom Thumb, Fortunio, Fortunatus, Jack the Giant-killer,*—tales like proverbs, equally familiar, under different versions, to the infant worshipper of Budh and the hardier children of Thor. I may say, without vanity, that in an examination in these venerable classics I could have taken honours!

My dear mother had some little misgivings as to the solid benefit to be derived from such fantastic erudition, and timidly consulted my father thereon.

"My love," answered my father, in that tone of voice which always puzzled even my mother to be sure whether he was in jest or earnest, "in all these fables certain philosophers could easily discover symbolical significations of the highest morality. I have myself written a treatise to prove that *Puss in Boots* is an allegory upon the progress of the human understanding, having its origin in the mystical schools of the Egyptian priests, and evidently an illustration of the worship rendered at Thebes and Memphis to those feline quadrupeds, of which they made both religious symbols and elaborate mummies."

"My dear Austin," said my mother, opening her blue eyes, "you don't think that Sisty will discover all those fine things in *Puss in Boots?*"

"My dear Kitty," answered my father, "you don't think, when you were good enough to take up with me, that you found in me all the fine things I have learned from books. You knew me only as a harmless creature, who was happy enough to please your fancy. By-and-by you discovered that I was no worse for all the quartos that have transmigrated into ideas within me—ideas that are mysteries even to myself. If Sisty, as you call the child (plague on that unlucky anachronism! which you do well to abbreviate into a dissyllable), if Sisty can't discover all the wisdom of Egypt in Puss in Boots, what then? Puss in Boots is harmless, and it pleases his fancy. All that wakes curiosity is wisdom, if innocent—all that pleases the fancy now turns hereafter to love, or to knowledge. And so, my dear, go back to the nursery."

But I should wrong thee, O best of fathers! if I suffered the reader to suppose that because thou didst seem so indifferent to my birth, and so careless as to my early teaching, therefore thou wert, at heart, indifferent to thy troublesome Neogilos. As I grew older I became more sensibly aware that a father's eye was upon me. I distinctly remember one incident that seems to me, in looking back, a crisis in my infant life, as the first tangible link between my own heart and that calm great soul.

My father was seated on the lawn before the house, his straw hat was over his eyes (it was summer), and his book on his lap. Suddenly, a beautiful delf blue-and-white flower-pot, which had been set on the window-sill of an upper story, fell to the ground with a crash, and the fragments spluttered up round my father's legs. Sublime in his studies as Archimedes in the siege, he continued to read—"*Impavidum ferient ruinæ!*"

"Dear, dear," cried my mother, who was at work in the porch, "my poor flower-pot that I prized so much! who could have done this? Primmins, Primmins!"

Mrs. Primmins popped her head out of the fatal window, nodded to the summons, and came down in a trice, pale and breathless.

"Oh!" said my mother mournfully, "I would rather have lost all the plants in the greenhouse in the great blight last May—I would rather the best tea-set were broken! The poor geranium I reared myself and the dear dear flower-pot which Mr. Caxton bought for me my last birthday! That naughty child must have done this."

Mrs. Primmins was dreadfully afraid of my father—why I know not, except that very talkative social persons are usually afraid of very silent shy ones. She cast a hasty glance at her master, who was beginning to evince signs of attention, and cried promptly, "No, ma'am, it was not the dear boy—bless his flesh—it was I!"

"You! how could you be so careless? and you know how I prized them both. Oh, Primmins!"

Primmins began to sob.

"Don't tell fibs, Nursey," said a small shrill voice, and Master Sisty (coming out of the house as bold as brass) continued rapidly, "Don't scold Primmins, mamma; it was I who pushed out the flower-pot."

"Hush!" said nurse, more frightened than ever, and looking aghast towards my father, who had very deliberately taken off his hat, and was regarding the scene with serious eyes, wide awake. "Hush! And if he did break it, ma'am, it was quite an accident; he was standing so, and he never meant it. Did you, Master Sisty? Speak! (this in a whisper,) or pa will be so angry!"

"Well!" said my mother, "I suppose it was an accident; take care, in future, my child. You are sorry, I see, to have grieved me. There's a kiss; don't fret."

"No, mamma, you must not kiss me; I don't deserve it. I pushed out the flower-pot on purpose."

"Ha! and why?" said my father, walking up.

Mrs. Primmins trembled like a leaf.

"For fun!" said I, hanging my head. "Just to see how you'd look, papa; and that's the truth of it. Now beat me; do beat me!"

My father threw his book fifty yards off, stooped down, caught me to his breast. "Boy," he said, "you have done wrong. You shall repair it by remembering all your life that your father blessed

God for giving him a son who spoke truth in spite of fear! Oh! Mrs. Primmins, the next fable of this kind you try to teach him, and we part for ever!"—"*The Caxtons*," *by Sir Edward Bulwer Lytton.*

Correspondence.

(The Editor begs to state distinctly that he is not answerable for the opinions of his Correspondents.)

A WORD OR TWO ON PUNISHMENT OF CHILDREN.

There is more judgment required in the just infliction of punishment upon children than the generality of persons appear to think; the custom of inflicting one chastisement, in schools, alike on every offender, or for any offence, is unfair, and calculated to produce evil results; such a system saves much trouble for the trainer, which is the only good that can possibly accrue from so unjust a custom. To punish every child with the same degree of severity, is like administering medicine of the same power to every invalid—that which would effectually cure one person would cause the death of another; so a punishment suitable for one offender might crush the more sensitive, or well disposed, and confirm the hardened in his own course. Corporal punishment need never be resorted to, when the child has been properly trained from an infant, and when its reasoning faculties have been drawn out and strengthened and the various causes and effects of its actions explained.

All punishments should be scrupulously avoided that are of a nature calculated to lessen the child's respect and affection for sacred things as maturity arrives. Reading or learning portions of Scripture, or any other occupation of a sacred nature, should be considered a favour or a duty, instead of a punishment. Thus much rebellious distaste, in after life, for holy subjects, would be softened, the soothing recollections of past and early pleasure derived from similar exercises (even if they had not been followed up through life) would endear, instead of producing a listless, irksome indifference, to the sublime truths of the Bible. The tender mind of a child must not be overtaxed or wearied on any subject; good, wholesome, and well-timed change of matter is as essential for its mind, as a suitable variety of food for its body, and as the latter requires light pure nourishment in small quantities, to keep it in health, so should the former be supported with tender care; great attention being paid to the suitable choice of proper subjects, to the right time of introducing, and the proper moment of dismissing them, which should be before any weariness is manifested by the child; it will then resume the topic another time with vigour.

M. D. R.

A WORD OR TWO ON EARLY TRAINING, &c.

In the work of instruction, it must be ever borne in mind that a refined education, where early moral training has been neglected, will not aid persons in the discovery of evil in themselves. The extent of evil arising from the omission would of course materially depend on the original formation of the mind, together with the nature of early example, but in the majority of cases, mere intellectual education, in any rank of life, would only aid the soul in the accomplishment of its own desires, which, though highly intellectual, might be radically wrong. It would also be cruel in the extreme to implant intellectual knowledge in those destined to follow the plough, if moral training to their station was neglected; for, in this way, education (which among this class, is necessarily very incomplete, owing to the early age at which they leave school) would make bad servants, by rendering them, as they would imagine, unfit for the duties that fall to their lot. Let them (and all) be taught that the best proofs of intellect and education are humility, thankfulness, and contentment. If, in after life, any such soul is really fitted for another office or station (we will not say more exalted, since all needful stations are equally exalted because equally necessary and useful) he may, if he has acquitted himself with propriety in the former, by circumstances over which he has no control or by an interposition of Providence, be placed where his talents, to their extent, will be required at his hands. The same careful training that produces a good servant, will produce a good master: both in the first place are bound to submit to those under whom they are placed, although the implanted idea of the duties of the after life of one is different in its nature to that of the other. The servant is to be trained to a due submission, and the master to rule with justice, humility, and love; and as intellectual cultivation is necessary to the latter, to the better performing of his duties, it is equally so, though not to the same extent, to the former, that he may cheerfully submit as a duty, and not with a forced or cringing servility; but intellectual without moral training would set the employed in his own opinion on a level with, if not above, his employer; thus mutual love, and usefulness, would be frustrated; neither could fill his station satisfactorily.

M. D. R.

METHODS OF GIVING LESSONS ON OBJECTS.

Rev. Sir,—It is too generally supposed that object lessons are applicable only to Infant Schools. This is a great mistake; for lessons of this character are applicable to children of all ages. And it would be well if instruction were regularly and systematically imparted on objects, &c., to the most advanced classes in our National Schools. How often do we find the greatest ignorance manifested on the most common and familiar subjects! The reason of this is, because the children's faculties of observation and comparison have never been exercised. They have been kept at the unvarying routine of reading, writing, and arithmetic; but the world of nature, so full of the highest and most ennobling lessons, has been to them a sealed book. Every teacher ought fully to realize in his school, the great poet's assertion:—

> "Tongues in the trees, and in the running brooks;
> Sermons in stones, and good in every thing."

How much higher and holier would their thoughts be of Him who called all things into existence, when in every atom that they tread upon, in every animal and object they behold, they were taught to see the most perfect manifestations of goodness and of wisdom! Would it not lead them

> "To meditate on Him, whose power they mark
> In each green tree that proudly spreads the bough,
> As in the tiny dew-bent flowers that bloom
> Around its root?"

It will be evident that, under the term "Object Lessons," a wide range of instruction is included. It does not refer, as is too generally the case, to the mere qualities of a mineral or a metal; but it takes a wider scope: it comprehends all Nature, animate and inanimate. The air we breathe; the water so essential to our comforts; the effects of heat on different bodies; the ink in daily use; the habits and instincts of animals; a loaf of bread; silk—its utility, and how produced: these, and others which it is needless to enumerate, would constitute a series of lessons both useful and instructive, and would initiate children a little into the mysteries of what has sometimes been termed, the "Philosophy of Common Things."

The following are the plans that are generally adopted in giving lessons on objects:—

1. The lesson is given entirely in the form of a lecture; care, however, being taken to use language the most simple, and to thoroughly explain any difficult term or expression that may be employed. The children are not allowed, however, to be mere passive recipients until the termination of the lesson. They are kept awake and attentive by *occasional* or *frequent* questioning, as the age of the children and the difficulty of the lesson may determine.

2. A modification of this plan, and generally speaking a better one, is this. The teacher gives a certain number of facts; he then proposes a series of questions to test the memory and the knowledge of the children on the points which he has given; he then proceeds with the lesson from the point where he stopped; again questions,—and so on, until he has finished the subject of his lesson. Finally, he proposes rapidly some questions on the most important facts that he has brought under their notice. Those who are old enough reproduce the lesson by writing it from memory, either on their slates or on paper.

3. It is given in the form of an *elliptical* lecture. According to this plan, as the teacher proceeds he *leaves out* certain words or expressions which the children are expected to supply or *fill up*. If the proper word be not given, it is an evidence that the children have not gone

along with the master in his explanations; that he has not been sufficiently lucid and simple; or that there has been a want of due attention on the part of the children. In such a case, it is the duty of the teacher to retrace his steps to a certain extent, and bring the children back to their original stumbling-point; if they are still unable to supply the proper term, the master must try suggestions and illustrations in order to obtain the desired result. Of course, the children are questioned during the progress of the lesson, as well as at its termination. The answers are sometimes given simultaneously, and sometimes individually : the latter, however, is to be preferred. On the subject of elliptical lessons, Mr. Stow has the following remarks :* —

" Never form an ellipsis in a question.

" In forming an ellipsis never give the first syllable of the word.

" A purely elliptical lesson is very tame. Questions and ellipses are the principle. The question sets the mind astir, the ellipsis directs what has been set a-moving.

" An ellipsis is a powerful and very natural link in training; but, if not judiciously made, may become very unmeaning and trifling. The ellipsis to be filled in ought always to be some word or words which the children *ought* to know, or which they have been trained to at the time, and which, when so expressed by the children, while it awakens attention, fixes the whole point in the memory—such being of course a leading part of the sentence."

In order to facilitate and systematize the instruction, the following heads and notes of lessons will be found useful. In page 138 of the Journal for 1849, there are clear and definite explanations of what is meant by composition of notes of a gallery lesson.

HEADS OF A LESSON ON AN ANIMAL.—THE MOLE.

1. Particulars regarding external appearance; such as colour, kind of skin, feet, teeth, &c.
2. Where it is found.
3. Its character, habits, peculiarities, &c.
4. How it is caught.
5. Its uses.
6. The lessons to be derived.

SPECIMEN OF NOTES ILLUSTRATIVE OF THESE HEADS.

1. Quadruped : has fine, soft, glossy fur ; the eyes are small, vision limited ; ears invisible, hearing delicate ; feet like hands, fingers five, claws strong ; snout pointed, smell keen ; body round.

2. Found chiefly in W. parts of Europe ; in rich meadows ; blind moles found in Greece and Italy ; Cape mole, noted for the splendid colours of its fur.

3. Powerful, chest strong ; food consists of worms and larvæ of insects, birds, frogs, mice, snails ; very voracious, cannot live long without food ; forms remarkable excavations on a regular plan ; makes its nest in a vault of soft grass and leaves.

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* Stow's Training System.

4. By traps of various kinds.

5. Opens up the ground; forms drains; destroys the roots of weeds, &c. Some consider it destructive.

6. Beautifully adapted to living underground; eyes wonderfully protected; wisdom manifested in the form of its body, shape of its feet, &c.; though nearly blind, has keen smell and hearing; when one faculty taken away another given.

I am your obedient servant,

R. M. A.

(*To be continued.*)

Notices of Books.

SOLUTIONS TO THE QUESTIONS OF THE FIRST GENERAL EXAMINATION OF SCHOOLMASTERS, CONDUCTED BY HER MAJESTY'S INSPECTORS OF SCHOOLS FOR AWARDING CERTIFICATES. BY TWO CERTIFICATED BATTERSEA MASTERS—W. HAMMOND, HEAD-MASTER OF THE COMMERCIAL TRAVELLERS' SCHOOL, WANSTEAD; AND J. GOODALL, MASTER OF THE BLUE-COAT SCHOOL, NORTHAMPTON. Pp. 186. (London: *Printed for, and published by, the Authors; sold by Thomas Ockenden, Holland-Farm School, Kensington, and all booksellers.*)

THIS is the second edition of a work which we have already noticed favourably. It is now very correct, except as far as the accentuation of the Greek is concerned, and we most cordially recommend it to those of our readers who are trying for a certificate.

A PRACTICAL TREATISE ON THE NATURE AND USE OF LOGARITHMS, AND ON PLANE TRIGONOMETRY; WITH LOGARITHMIC AND TRIGONOMETRICAL TABLES. BY JAMES ELLIOT. Pp. 219.

KEY TO PRACTICAL TREATISE ON LOGARITHMS AND PLANE TRIGONOMETRY: CONTAINING DEMONSTRATIONS OF THE RULES NOT DEMONSTRATED IN THE TREATISE, SOLUTIONS OF THE MORE DIFFICULT EXERCISES, ETC. BY JAMES ELLIOT. Pp. 79. (Edinburgh: *Sutherland and Knox.*)

Two works which will probably attain a high reputation. Their peculiar value consists in the number of examples, of a *practical* kind, which are proposed in one volume, and solved in the other.

THE DOUBLE CLAIM: A TALE OE REAL LIFE. BY MRS. T. K. HERVEY. WITH FRONTISPIECE BY WEIR. Pp. 144. (London: *Arthur Hall.*)

A CHARMING story, which we regret that our limits and general design do not allow us to analyse.

THE BIBLE OF EVERY LAND; OR, A HISTORY, CRITICAL AND PHILOLOGICAL, OF ALL THE VERSIONS OF THE SACRED SCRIPTURES, IN EVERY LANGUAGE AND DIALECT INTO WHICH TRANSLATIONS HAVE BEEN MADE: WITH SPECIMEN PORTIONS IN THEIR OWN CHARACTERS; AND ETHNOGRAPHICAL MAPS. Pp. 236. (London: *Samuel Bagster and Sons.*)

Another part of an excellent work, to which we have often referred. It continues specimens of the Indo-European family.

A GRADUS AD PARNASSUM, FOR THE USE OF ETON, WESTMINSTER, WINCHESTER, HARROW, AND THE CHARTER-HOUSE SCHOOLS, KING'S COLLEGE, LONDON, AND MARLBOROUGH COLLEGE. BY C. D. YONGE, B.A., AUTHOR OF "AN ENGLISH AND GREEK LEXICON," Pp. 676. (London: *Longmans.*)

We venture to predict that this very able work will supersede the Gradus now generally in use. It is in many ways distinguished from that compilation. The numerous epithets which have served so successfully to enfeeble Latin verse composition are omitted. The words used by the authors of the Golden Age, Catullus, Virgil, Horace, Tibullus, Propertius, Ovid, &c., are carefully distinguished from those in use among their predecessors and successors.

EDUCATIONAL OUTLINES, AND OTHER LETTERS ON PRACTICAL DUTIES. TO WHICH IS ADDED A JOURNAL OF A SUMMER'S EXCURSION, MADE BY THE AUTHOR AND HER PUPILS. BY A LADY. Pp. 116. (London: *Groombridge and Sons.*)

This volume we cannot recommend. The very title is not grammatically expressed. The "Educational Outlines" had better have remained unpublished. The "Journal of a Summer's Excursion" is lamentably meagre and incorrect. The fair writers should have compared their journal with Murray's Hand-books, and they would have found its inaccuracy. The engraving of the Palace of Versailles is a specimen of the contents of the volume. It is more like an union workhouse than the gorgeous creation of Louis the Fourteenth and his architects.

THE LITERARY CLASS-BOOK; OR, READINGS IN ENGLISH LITERATURE: TO WHICH IS PREFIXED AN INTRODUCTORY TREATISE ON THE ART OF READING AND THE PRINCIPLES OF ELOCUTION. BY ROBERT SULLIVAN, A.M., BARRISTER-AT-LAW, &c. Pp. 512. (Dublin: *Curry.* London: *Longman.*)

A volume well worthy of Professor Sullivan's reputation as a compiler of elementary books. It is sure to be largely read.

EASY AND PRACTICAL INTRODUCTION TO THE FRENCH LANGUAGE, BY J. HAAS, TEACHER OF MODERN LANGUAGES, QUEENWOOD COLLEGE. HANTS. 12mo. pp. 140. (London: *Darton*.)

THIS little volume is an adaptation in an English dress of "Dr. Ahn's Practical Method of learning French," written for German pupils, It seeks to accomplish its object by easy and progressive lessons, each lesson teaching something new, while it recapitulates what has been done in former lessons. It will be useful in the hands of a good French teacher.

OCEANUS; OR, A PEACEFUL PROGRESS O'ER THE UNPATHED SEA. BY MRS. DAVID OSBORNE. WITH ILLUSTRATIONS BY A. COOPER, R.A. Square 12mo. pp. 307. (London; *Longmans.*)

THE plan of this little volume is very pleasing, and the mode in which the authoress has carried it out original and piquant. A little geographical society is formed by a family party, and each gives some telling information respecting the condition and habits of different nations, and the geographical features of the countries which they severally inhabit. The volume is pervaded by an unaffected religious spirit, and we cordially recommend it to our readers.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 54.—*Proposed by J. H.*

A CERTAIN square pleasure-ground, containing 1¼ acre, has in its centre a circular sheet of water, covering 1 rood, 20 perches: find the length of the paths reaching from each of the angles to the water's edge.

Answered by Emma Royds.

Here the whole area = 6050 sq. yds.

∴ The diagonal = $\sqrt{2 \times 6050}$ = 110 yds.

Area of the pond = 1½ roods = 1815 sq. yds.

∴ Diameter of the pond = $\sqrt{\frac{1815}{.7854}}$ = 48·072.

∵ Length of the path = ½ (110 − 48·072) = 30·964 yds.

QUES. 55.—*Proposed by Oswald, Fordmoss, Northumberland,*

Find two fractions whose sum is $1\frac{5}{12}$, and product ½.

Answered by Mr. Alder, Worsley.

Let x and y be the two fractions, and put a for $1\frac{5}{12}$, and b for ½, then we have

$$x + y = a \ldots (1),$$
$$\text{and } xy = b \ldots (2).$$

$$\text{From (1), } x^2 + 2xy + y^2 = a^2;$$

$$\text{From (2), } 4xy = 4b,$$

$$\therefore \text{ by subtraction, } x^2 - 2xy + y^2 = a^2 - 4b$$

$$\therefore x - y = \sqrt{a^2 - 4b}.$$

Adding this eq. and (1) together, and dividing by 2,

$$x = \tfrac{1}{2}\left\{a + \sqrt{a^2 - 4b}\right\} = \tfrac{3}{4},$$

$$\therefore y = 1\tfrac{5}{12} - \tfrac{3}{4} = \tfrac{2}{3}.$$

QUES. 56.—*Proposed by P. E., Lamesley.*

The locus of the points of intersection of all the tangents drawn to a given circle, and containing a given angle, is the circumference of a circle concentric with the given one. Determine the radius of this circle when the tangents intersect at an angle of 60°.

Answered by Mr. Salter, Durham; and H. V. P.

Let C be the centre of the circle; A B and A D the two tangents, meeting each other in A, and touching the circle in the points B and D respectively; join C A, C B, and C D; then the triangles A B C and A D C are identical, and therefore A B = A D, and ∠ C A B = ∠ C A D = ½ of 60° = 30°. Hence we have

$$\frac{CB}{CA} = \sin. 30^\circ = \tfrac{1}{2},$$

$$\therefore CA = 2\,CB;$$

That is, C A is always twice the radius of the given circle; hence the locus is a circle.

LIST OF MATHEMATICAL ANSWERS.

A. Y. Z., Tewkesbury, ans. 54, 55, 56; W. Brown, ans. 54, 55; J. Salter, Durham, ans. 54, 55, 56; H. V. P., ans. 55, 56; G. Barnacle, Empingham, ans. 54, 55, 56; J. Scott, Bradford, ans. 54; W. Mitcheson, Newcastle, ans. 54, 55; W. R., ans. 55, 56; Thomas Sothern, Burton Wood, ans. 54, 55, 56; W. P. F., ans. 54, 55, 56; H. P., ans. 54, 55, 56; F. Crampton, ans. 54, 56; Emma Royds, Hollingworth, ans. 54, 55, 56; C. Elsee, Henley, ans. 54, 55, 56; J. W. Leaver, Woolwich, ans. 54, 55; A. Allen, Fordmoss, ans. 54, 55, 56; W. Righton, Ripley, ans. 54; L. Laywell, ans. 54; Marcus, Dewsbury, ans. 54; Prismoid, Tewkesbury, ans. 56; J. Sheppard, Gitlingham, ans. 54, 55, 56; J. Alder, Worsley, ans. 54, 55, 56; Thomas Wilson, ans. 54, 55; Petit Garçon, Eccleshall, ans. 54, 56; G. B. Bushy, Yeovil, ans. 54; W. Spooner, Rugeley, ans. 54; J. Royds, Belfield, ans. 54, 56; J. Taylor, Felton, ans. 54; Moses Molineaux, Walkden, ans. 54; J. Barber, Harworth, ans. 54; J. Webb, Ightham, ans. 54; F. W. B., Pembroke Dock, ans. 54, 55, 56; T. Dunn, Ightham, ans. 54; T. H. Bolt, Battersea, ans. 54, 55; J. O'Clazey, Durham, ans. 54, 55, 56; Cantab, Loughbro', ans. 54; Maggs, Cooke, and Derrick, Radstock School, ans. 54; W. Bower, Bridgenorth, ans. 54, 55; X. Y. Z., Dunstable, ans. 54; John Elliott, Lamesley, ans. 54, 55, 56; B. Whitham, Wolverhampton, ans. 54, 55, 56; W. Righton, sen., Ripley, ans. 54, 56.

NEW QUESTIONS,

TO BE ANSWERED IN OUR NUMBER FOR APRIL, 1850.

QUES. 57.—*Proposed by Mr. O'Clazey, Durham.*

THE slant height of a right cone is 60 feet, and the solid content 30063 cubic feet: required the perpendicular height.

QUES. 58.—*Proposed by J. H.*

A cylindrical tin canister, 3 inches in diameter, and 6¼ inches in height, holds exactly a pound of ground coffee: required the specific gravity of the coffee.

QUES. 59.—*Proposed by Mr. Whitham, Wolverhampton.*

To find the value of x and y from the following equations:

$$\left\{\begin{array}{l} x^2 + x\sqrt[3]{xy^2} = a \ldots (1) \\ y^2 + y\sqrt[3]{x^2y} = b \ldots (2) \end{array}\right\}$$

Intelligence.

ON Friday, Feb. 7, a meeting was held at Willis's Rooms for the purpose of passing resolutions upon the present state and prospects of National Education, and of agreeing to an address to her Majesty the Queen and petitions to both houses of Parliament. Amongst those who were present were, the Bishops of Bath and Wells, Exeter, Chichester, and Glasgow; Earl Nelson, Viscounts Campden, Feilding, and Castlereagh, M. P.; Lord Lyttelton, Sir A. Hood, Hon. R. Cavendish, A. J. B. Hope, M. P., J. Napier, M. P., Roundell Palmer, M. P., W. Miles, M. P., Wegg Prosser, M. P.; Archdeacons Manning, Thorp, Harrison, and Allen; Reverends Sir G. Prevost, Dr. Wordsworth, Dr. Spry, Dr. Mill, John Keble, H. H. Norris, Dr. Molesworth, A. Watson, J. H. Woodard, G. A. Denison, G. Nugee, J. Anderson, Dr. Harrington (Principal of Brazenose College, Oxford); Captain Moorsom, — Hubbard, Esq. R. P. Bastard, Esq., Dr. Monro, T. H. Haddan, Esq., &c. &c. The Hon. J. C. Talbot, Q. C., in the chair. The following resolutions were agreed to. "That, in the opinion of this meeting, the present position and circumstances of National Education are of a critical nature, and such as to cause serious alarm, on grounds both civil and religious:" moved by the Bishop of Glasgow; seconded by Joseph Napier, Esq., M.P.—"That the Committee of Council on Education, a body of recent origin, consisting of few members, subject to political changes, having, in their corporate capacity, no definite creed, but encouraging indiscriminately various and conflicting forms of belief, is rapidly assuming the attitude, and engrossing the functions of a Legislative Board of Public Instruction, in a manner hitherto unknown to the laws of the land, and at variance with the principles of the Constitution; thereby fully realizing the apprehensions which were expressed in Parliament in the year 1839, by eminent Prelates and Laymen of the Church, and which formed the subject of certain resolutions then moved by his Grace the late Archbishop of Canterbury, and carried in the House of Lords by an overwhelming majority:" moved by the Rev. W. A. Denison; seconded by the Hon. R. Cavendish.—"That, notwithstanding that vote of the House of Lords in the year 1839, and in opposition to repeated remonstrances on the part of the National Society, the Committee of Council has been continually making fresh aggressions, particularly by the promulgation of arbitrary minutes, and by the imposition of management clauses upon Church schools, as indispensable conditions of public aid, and has thus impaired the energies and obstructed the operations of the Church in the discharge of her proper functions in educating the people:" moved by the Right Reverend the Lord Bishop of Chichester; seconded by the Right Hon. Earl Nelson.—"That the system of popular instruction adopted by the Committee of Council is avowedly formed on the model of that, which, in the opinion of this meeting, has led to most disastrous results in Germany and France; and that there is great reason to fear that, unless measures are promptly adopted to counteract the endeavours of the Committee of Council to propagate that system, it will in the end reduce this country to the condition of anarchy and confusion in which those nations have been recently plunged:" moved by the Rev. W. Sewell; seconded by the Rev. M. Barter, Warden of Winchester College.—"That the apprehensions of this meeting respecting the tendencies of the system adopted by the Committee of Council are considerably increased by the establishment of the normal school at Kneller-hall, at the expenditure of more than 30,000*l.* of public money, without previous parliamentary sanction; and by the system of inspection exercised under the control of the Committee of Council over the union schools of this country, which measures appear to this meeting to be fraught with danger to the religion of the people, and to have been effected in violation of the spirit of a previous understanding between the Committee of Council and the Church of England:" moved by the Rev. Dr. Biber; seconded by Mr. Bastard.—"That, in the opinion of this meeting, it has now become necessary that an appeal should be made to the Imperial Parliament, with the view of removing the impediments created by the Committee of Council, which now preclude many Church schools from receiving public money, voted by Parliament for education, and contributed mainly by members of the Church; and of aiding the Church in putting forth her energies, free and unfettered, in educating the people according to her own principles, and thus most effectually promoting the peace and prosperity of the nation, and the temporal and spiritual interests of all classes of the community." Moved by Roundell Palmer, Esq.; seconded by the Rev. J. B. Clark.—The meeting dispersed at half-past six; the proceedings having occupied six hours and a half.

PLAN FOR CERTIFICATES OF MERIT BEING GRANTED BY THE LORD BISHOP OF THE DIOCESE TO MASTERS AND MISTRESSES OF NATIONAL SCHOOLS.—Palace, Wells.—My dear Sir,—I have read over the Rules, with regard to our proposed scheme of an annual voluntary examination of the Schoolmasters and Schoolmistresses throughout the Diocese, with great attention, and I think them most judicious. With regard to the plan itself, after our conversations, it is unnecessary for me to repeat my most cordial and entire acquiescence and approval—and I earnestly hope that what is so well calculated to test and do credit to the Teachers, and to be a security to their employers, the Clergy, for proper and adequate instruction, will be heartily sought and embraced by both parties. I truly think it a plan likely to work great

good in this Diocese, or wherever adopted. Believe me, my dear sir, faithfully yours, R. Bath & Wells.
Rev. J. B. B. Clarke.

I.—One Examination in the year for the whole Dioces, at a certain place, this place to be varied if needful.

II.—All Teachers, male and female, of Parochial Schools, who have conducted their present Schools at least one year, and whose Schools have been inspected by the Diocesan or District Inspectors, may be examined.

III.—Testimonials required, of which the Blank Forms may be obtained on application to the Diocesan or District Inspectors. 1. A Certificate from three Communicants of the Church of England, of good behaviour and aptness to teach. 2. A Testimonial from his Clergyman as to character. 3. A Testimonial from the District Inspector as to the state of his School. 4. In the case of Schoolmistresses, a Certificate from three Ladies as to capability to teach all useful needlework.

IV.—The Examination shall be held the first Tuesday in June, 1850, at Bridgewater: every Candidate must be present at 9. 30 o'clock at the School-room, and the Examination will be concluded at 6 o'clock on the same day.

V.—The Subjects.—*Scripture* :—the Services of the *Prayer Book* :—some of the leading events in *Church History* :—*Geography*, especially of Europe and the British Possessions :—*English History* :—*English Grammar* :—*Arithmetic* :—*English Composition* : — *Music and Singing*, desirable but not necessary. Any Candidate wishing to be examined on any other Subject is requested to give intimation of such desire to the Examiner; and should the subject be thought proper, and he pass a satisfactory examination on it, it will be mentioned in his Certificate.

VI.—The Candidates will have no expense at the place of examination. The Certificates will be delivered to the successful Candidates free of all charge.

VII.—The Examination will be conducted by the Diocesan Inspector and two of the District Inspectors requested to assist him.

VIII.—Every Candidate must send Notice to the Diocesan or District Inspectors of his wish to be examined, three Months previous to the Examination; and each District Inspector will forward to the Diocesan Inspector any such Notice that he may receive.

Note.—The Names of those Masters and Mistresses who have obtained Certificates will be kept suspended in the room of the Diocesan Society's Office, Wells; and be also republished annually in the Diocesan Educational Report; nor be removable from either, except from some cause which shall seem sufficient to the Lord Bishop of the Diocese.

To Correspondents.

We have not room for Kappa's facetious communication.

X. Y. Z.—Mr. Abraham's, of Eton. Apply also to Mr. Masters, publisher, Aldersgate-street.

W. R. Boyer's is the best; but if a *cheap* one be wanted, get Nugent's.

A Subscriber.—Probably Professor Sullivan's works.

Cheltenham.—We regret equally with yourself the rude and unchristian tone of Mr. Close's address at the recent meeting of the Cheltenham Training Schools. We cannot, however, make room for your communication. "Controversers are like sprites in the minerals; they make great noise, but do no good." Such was the opinion of a great and good man two hundred years ago, and we are daily witnessing its truth.

METHOD, AND THE PRINCIPLES OF TEACHING:

BEING THE SUBSTANCE OF A LETTER ADDRESSED TO A CLERGYMAN IN INDIA, IN CHARGE OF SOME IMPORTANT EDUCATIONAL ESTABLISHMENTS.

MY DEAR SIR,—I have long been anxious to write to you, relative to the important schools which are intrusted to your care. My experience, during the six years which have elapsed since you left England, has led me to adopt many new ideas concerning pedagogy, method, and the construction of school buildings; and these I am desirous of communicating to you. The plans which we carried out together in this country were very desultory and imperfect. They were rather the efforts of ardent zeal, than of well-defined knowledge founded on diligent inquiry. Permit me to suggest to you others, worthy, I trust, of your attention, as being the result of much careful consultation, both in Great Britain and the principal countries of the continent, with men who are at the head of their several departments in the great field of public instruction.

I shall not attempt to add any new definition of education to the many which you have, without doubt, seriously considered. It will be sufficient for me to state, that if you would be a true and successful educator, especially of children who have few or no other means of instruction, it is highly desirable —I had almost said, it is essential—that you should study well certain general principles, and certain practical laws founded upon them, which we term pedagogy, for want of a good Anglo-Saxon word to express the same thing. Pedagogy may be viewed in two ways, both as a *science*, and as an *art*, and a man may attain to much information concerning the former, while he is practically ignorant of the latter. Experience proves to us, that it is far more easy to get up certain principles and general laws, to study their modifications and limits, than to carry them out successfully in practice. On the other hand, a man moved by a strong religious impulse, or by a kind of intuitive power, may be a successful teacher without any technical knowledge or experience of method; but he cannot as a teacher "walk fully worthy of the vocation wherewith he is called," without a calm and consistent study of the theory on which his instructions, so far as they are true, have been founded. In the work of education, instruction occupies the foremost place. But, to succeed fully, it must be given with system and order. Hence the value of knowledge on method, and the principles of teaching.

Hence the long letter which I venture to write to you on these subjects, for your kind consideration, designed to aid you in the important work which, in the order of the Providence of God, has been intrusted to you.

You must not suppose that the principles of teaching which I am about to communicate are arbitrary inventions, hypotheses which have sprung from the fertile brain of some clever instructor. They are essentially founded on the nature of man, and as such they bear the most intimate relation to his intellectual, and, in a certain sense, to his moral progress and development. They have sometimes been distinguished as *general* principles, and *special* principles; sometimes as positive and negative. I prefer, for convenience, to range them under three heads:—

1. Those which specially concern the teacher.
2. Those which concern the pupil.
3. Those that concern the subjects of instruction.

1. Of the principles which especially relate to the teacher, the first is:—*That he ought to know thoroughly any subject which he wishes successfully to teach.* We cannot communicate clearly and precisely to others that of which we do not conceive clearly ourselves. We cannot, as a general rule, make others understand that which we do not understand. This observation will appear to you trite and commonplace. The non-reception of it, however, is one of the most common causes of the failure of our teachers. They imagine that from the darkness of their own mind, light will spring up in that of their pupils. The remark especially holds good when applied to the teacher of children, who, as in the case of most heathen schools, have few resources of indirect or informal instruction. Those children must, in the nature of things, receive only superficial ideas; which may offer a barren tribute to the vanity of their instructor, but which will leave no deep, permanent, and salutary impression on their own minds.

2. *Every teacher ought to study, with constantly renewed attention, the subjects upon which he is daily employed in giving instruction.* However accomplished a schoolmaster may be in any department of school work, he will find upon testing his knowledge in practice, that there are points which have escaped his attention, and depths which he has failed to explore. I cannot but place among the mercenaries, those teachers who, from the beginning to the end of the year, treat every subject in the same manner, daily and tritely repeating themselves, as though their brains had no elasticity or power of extension. Such teachers remind me of an Italian boy, grinding ever the same changeless tunes on his organ, or of some self-acting instrument which repeats the same rotation of chords. They

are mere machines, and grow daily more incapable of awakening a generous impulse in the hearts of the children, whose education they are thus permitted to retard.

2. *Every true teacher after having gone through any subject of instruction with his pupils twice or thrice, will seriously examine his course, in order to see* (1) *whether it has been consistent and proportionate;* (2) *what faults he has committed in relation to manner, method, or matter of instruction; and* (3), *whether he has given to it all the development of which it is properly capable.* To act on this important principle, you must be faithful to yourself. You must, with impartial rigour, casting aside all vanity and self-gratulation, search into your course of instruction and its various parts; and throw aside, without a regret, all unsuitable matter, all bad method, although it may have become so familiarized by use as to be almost attractive. This task of self-scrutiny you will find a hard one. I do not pretend to disguise this. It will require on your part not only much right principle, but much moral courage. Eliminate fearlessly from your time-table whatever is flashy, fallacious, and untrue; and eventually your own conscience, if not the suffrages of the world, will abundantly reward you.

4. *The teacher ought to show that he takes a real interest in all that he does.* The greater his constancy and ardour, the more certain and extended will be his success. This ardour will chiefly depend upon his familiarity with what he has to teach, and his efforts to improve himself. It is ignorance that generally produces idleness in a teacher, and indifference to the progress of his scholars. . It has been remarked that sometimes an ingenious charlatan will simulate the earnestness which he ought really to feel; and by theatrical attitudes and affected energy, will appear to strangers all that in these respects could be desired. He is sure to be found out by his scholars. The penetration of children must not be underrated. They are keen, and sometimes sarcastic observers; and will soon discern the falsehood and the vanity of a pretender.

5. *He must ever recognise the dignity of his vocation, and the necessity of self-respect and energetic propriety.* One is often astonished to find that well-instructed teachers, not wanting in conscientiousness and piety, utterly fail to achieve in their schools the results which their patrons had a right to expect. The phenomenon is easily explained: these teachers bring to the discharge of their functions neither firmness, energy, nor dignity. They want consistency. Their discipline is weak, uncertain and vacillating. A just severity, a strong will, a decided character on the part of the teacher, are essential to his success. He must not flatter himself that he can replace these qualities by soft indulgence and amiable laxity: by an

undiscriminating kindness, which tolerates and pardons every fault. The best affections of our riper years are generally given to those teachers who were most justly severe to our youth.

6. *He must studiously endeavour to render his instructions attractive.* In carefully carrying out the principles which I have just laid down, you will perhaps imagine that you have done all that is necessary to interest your scholars. Something more, however, is desirable. There is a nameless charm, a mysterious power about some teachers, a tact and delicacy of manner, which secures for them at once the attention of their pupils. To such instructors, children open all the pores of their understanding, and drink in the information which it is the business of the teacher to impart; while he elicits, apparently without an effort, and re-combines all that they already know. On the other hand, there is a hard-featured coarseness of manner, a rude and unfriendly address, which at once disgusts and repels; or a monotonous tone, which, like the soporific conversation of some castle of indolence, or island of lotus-eaters, sends the mind, if not the eyes, of the pupil to sleep. Perhaps in relation to *matter*, that which the pupils suspect to be useless, as far as the objects of the particular lesson are involved, will prove least attractive. Perspicuity and keeping close to the subject, generally secure a certain amount of attention.

I venture to recommend that pleasantries designed to vary the dulness incidental to some technical studies should be rarely and sparingly introduced. A schoolmaster is not intended to be a professional joker. He must captivate his pupils by other and more suitable means.

I am tempted to enlarge on the mode in which a well-disciplined teacher will acquire by study and art that power of attraction which some persons appear to possess as a natural faculty. But my limits compel me to refrain. You will do well to watch good teachers, and what one may term their rhetorical artifices, and their involuntary specimens of *tact*.

The first principle of teaching suggested by thinking of the *pupil* rather than the *master*, appears to be this:—

1. *That the course of your instruction ought to bear an exact relation to the intellectual development of the scholars.* It is useless, for instance, to teach abstractions to little children, and nothing but what is presented in a concrete form to those of mature years. This principle is closely connected with another, namely—

2. *That we ought never to lose sight of the personal, mental constitution of the children we teach, and their power of taking*

in knowledge in this or that form. Some are endowed by Divine Providence with real power, enabling them quickly to receive and permanently to retain your instruction. Some exhibit precocious quickness, which is apt to receive impressions quickly, but does not retain them. Some are slow and sure. Some are slow and not sure, for they learn little or nothing without much pains on your part, and many a mental pang and effort on their own. The imagination of some is ever wakeful, but they are incapable of calm and sustained reflection and thought. You must study these varieties of mental constitution. You will fail if you deal with all exactly alike. You will be unjust in your discipline. You will punish, on the one hand, those whom God has not gifted. You will pamper, on the other, those who have, it may be, little claim to your esteem. These observations are inconsistent with the attempts, so often made and so often unsuccessful, to teach a great number of children by means of one master. Such attempts are only justifiable on economical grounds. No schoolmaster, unassisted, ought to have the management of more than sixty scholars. I would rather say that fifty, if properly attended to, will exhaust his powers; if he honestly seeks to form their minds, and not to force them.

Closely connected with this due appreciation of the individual mental character of each child, there is another principle:—

3. *That you take care to ascertain the actual knowledge of the pupil, at the time he enters on your course of instruction.* This remark applies equally to the teacher of a school, and to a private tutor. You are not to suppose that the child or youth has acquired nothing from other instructors, or from the informal teaching of society, before he comes under your notice. On the other hand, you must not estimate this knowledge too highly. If you suppose that he knows less than is actually the case, you will probably waste his precious time, by giving him lessons with which he is already familiar. If you suppose that he knows more, you will do still worse, and the result will be still more disastrous;—you will put him too forward in your school; he does not comprehend the work which he is set to do; he becomes discouraged, and, it may be, idle; his moral character is deteriorated; and he is hereafter obliged to be put back, by yourself or others; to the disparagement of his self-respect, and perhaps the permanent injury of his prospects in life.

I have already remarked, that you must not favour one scholar on account of his precocious talents. I wish now to lay it down as an axiom—

4. *That the most dull of your scholars should habitually receive*

a very considerable, not to say the largest part of your instructions. The Church and Society expect of you, that you will not spend your time, and their money, in pushing forward a few premature prodigies, who may form a first class, and be always producible on days of public show; but that you will distribute your efforts equally over all your scholars. There is reason to fear that in this country a considerable portion of the children who frequent our primary schools, leave those institutions almost as ignorant as when they entered. They are dull and ordinary lads, who never struggle into the upper regions of the school, nor force their claims upon the personal attention of the master. I trust that this statement does not apply to the noble establishment under your management. Remember, that the moral and intellectual improvement of a great number of young persons is far more honourable to a teacher, than the extraordinary development of a few. It is unquestionably a more agreeable task for a teacher to work with a select class of active and intelligent children, than to spend his strength among a mass of obstinate and fatiguing dullards. But, however at first disagreeable, these must be his peculiar care. These are the sick that have the most need of a physician. This is the soil, from which no fruits at all can be expected, if there is not careful cultivation; but which will be covered with noisome and poisonous weeds.

I proceed now to point out some of the principles of teaching which seem to have a special relation to the subjects of instruction. And

1. *First, let me recommend that your scheme of instruction be not only comprehensive, but co-ordinate.* It is pretended that in elementary instruction you need not proceed upon any fixed and exact plan of teaching so many subjects, and no more, coordinately and consistently, but may, without disadvantage to the pupil, choosing them arbitrarily, press on sometimes one subject and then another. I am convinced that this manner of teaching is erroneous. Children ought to be taught regularly and systematically, and not be allowed to become proficients in one subject of instruction, when they are utterly ignorant of another equally essential. A young lady who can play well on the pianoforte, but cannot add up a mercer's bill, or read with grace and propriety, would form an example of the infringement of this principle.

Some educators, who wish to discipline the mind of an adult, employ him upon a single subject in language or science, requiring great exactness, and force his wandering thoughts into that channel, and that only. One remarkable teacher, whom it is a pleasure to know, takes a peasant, and leaving his knowledge of the English Grammar and literature to be obtained from other sources, sets him to work upon algebra and geometry, and other branches of mathematical science. This peasant becomes by-and-by a proficient in conic sections, but he cannot spell a simple sentence. He can calculate chances to a nicety, but he cannot tell the geographical position of the capital of his native country. Others, again, give their pupils a chapter of Thucydides to analyze, when they can scarcely distinguish between a Greek noun and a verb, leaving them all the hardships of exploring grammars and lexicons in search of a word or its inflexions. These plans may be not without advantage when an adult is to be instructed. They are supported by such high authority, and have met, as I know, with such complete success, that I dare not ignore them. But in the education of children the case is essentially different.

2. *Let me advise you not to glide too lightly over the first elements of instruction, but to revert again and again to first principles.* Young instructors are apt to forget this caution. They want to show the world how much they have accomplished in an incredibly short time. If the fundamental principles of knowledge are not firmly built up in the minds of children, they will have no ground on which they can construct a solid superstructure. The time which is spent in *elements* is never lost time. Many a competitor for mathematical honours has sighed for want of familiarity with the working of the simplest forms of vulgar fractions. Many a classical student under examination has lost his place, and perhaps sunk into a second degree for life, because he was ignorant of some principle of syntax.

3. *Teach always inductively.* I mean by this that you should start from principles and facts, and not from rules. Let the rules grow of themselves out of the principles. Let them not be forced upon the mind of the pupil as arbitrary laws, laid down dogmatically without proof.* Many definitions have been given of induction, as a form of logical argument and philosophical investigation. It is sufficient for my purpose to state that the inductive process is exactly the opposite of the deductive; for, while the latter proceeds from the whole to the part, the former ascends from the part to the whole. It invites us then to teach constructively. It would suggest, for instance, that lessons on the steam-engine should commence with the production of the motive power, and proceed thence to describe its effects. It would lead the chemical lecturer, when in the presence of

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* "Ce n'est point par la routine qu'on s'instruit, c'est par sa propre réflexion; et il est essentiel de contracter l'habitude de se rendre raison de ce qu'on fait: cette habitude s'acquiert plus facilement qu'on ne pense; et une fois acquise, elle ne perd plus."—CONDILLAC.

his class, first to compose water, and then to decompose it. Acting on Aristotle's form of defining induction, as *an inference drawn from all the particulars*, a good instructor would invite his scholars to state a number of particulars in regard to any subject under discussion, and then to infer a law from them; rather than that he should lay down the law, and then should illustrate it by certain selected particulars. The one process leads to investigation, discussion, and those forms of scepticism which are healthy. The other appears to do just the reverse, leaving the mind to stagnate. The deductive process "builds worlds on hypothesis." It produced the solar system of Tycho Brahe, and taught the alchemists that salt, mercury, and sulphur are the primitive uncompounded substances from which all others are derived. It was the contrary principle that guided Copernicus in his astronomical researches, that held the burning-glass of Priestley when oxygen was discovered, and that constructed the safety-lamp of Davy. But on this fruitful topic I must not enlarge; rather let us examine another principle that flows from it, namely—

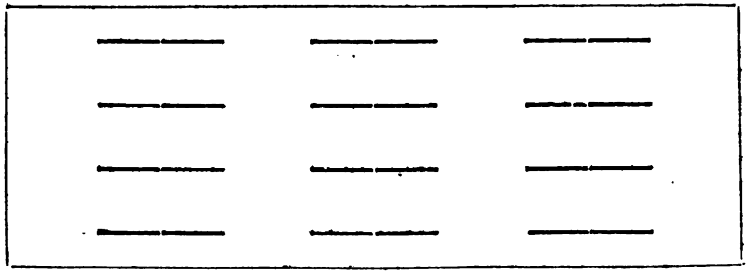
4. *Always proceed from the known to the unknown.*—If you travel out of the sphere of the intelligence of a pupil, you become little more than a mere prater of words. You bind, as it were, the eyes of your pupil, and carry him suddenly into scenes where the light and the colour of all things are new. He does not know where he is, or whither he is going. He can neither move forward nor return. Children who have been well taught can always retrace their steps. At the risk of anticipating the sequel of my communication, I cannot help quoting in illustration of this principle, an extract from a letter written to me by an eminent educator, on the teaching of geography, and the explanation of a map. It is somewhat satirical, but not the worse on that account:—

"I believe that your method of teaching geography to children is altogether wrong; that you here entirely forsake the principles which form the basis on which your students are taught to proceed, in imparting instruction on other matters; and I fear that the children in their schools generally know very little of the subject. That they know as much as the pupils of other schoolmasters, I do not doubt, but I think that your pupil should not be satisfied with simply keeping on a level with others in his profession if he finds the result unsatisfactory.

"You begin teaching the geography of the world, by 'a few remarks on the figure and the motions of the earth,' and of any country, by first naming its boundaries, and then its latitude, longitude, length, &c. Now this seems to me just as if a good mathematical master were to begin teaching arithmetic by 'a few remarks' on long division, and then proceed to describe the use of decimal fractions, and the rule of three. In truth, I believe it would be easier for an ignorant person to understand decimal fractions than to grasp the subject of the 'motions of the earth,' and latitude and longitude. Why not begin teaching geography as arithmetic, with the simplest notions that can occur to a child on the subject? Why not adopt here the sound principle of advancing from the known to the unknown? A good mathematical master begins teaching arithmetic by making the child add three strokes to four strokes, and asking such questions as, 'If a man has three shillings in one pocket and two in another, how many has he altogether?' Here the teaching is properly grounded on some original simple notions previously existing in the child's mind. Now cannot we find some equally simple geographical ideas in its mind, on which we can build the fabric of knowledge on this subject? I believe we can, and as I hate finding fault without suggesting a remedy, I proceed to describe how I think geography ought to be taught.

"I imagine a master standing before his class, to whom he is about to give their first lesson in geography. He begins thus: 'Now, children, I am going to give you a lesson on geography. Geography means a description of a country. If we know where the towns, villages, and rivers of any country are, we know its geography. And if we draw the position or place of these towns, &c., on a piece of paper or board, we make a map. A map is nothing more than a sort of picture of a country or place. We can make a map of as small a place as we like; but when we make a map of a house, showing how the rooms are situated, or of a place not larger than a garden, we generally call it a plan. Now I am going to draw a map or plan of this schoolroom on the black board!'

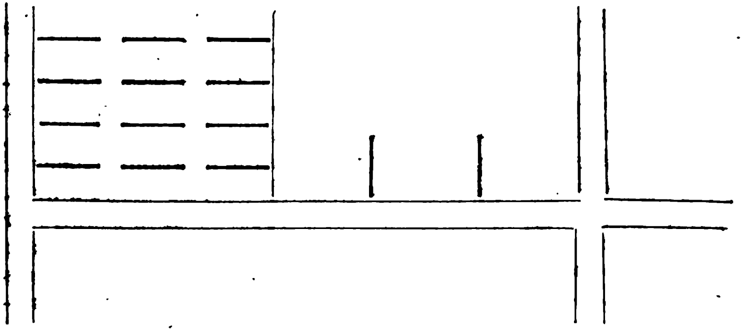
"The teacher then takes his chalk and sketches the schoolroom, making the benches about ten inches long, something like this:



He then asks if any one can tell him which is the first class.

I think he will have a dozen hands held up ready to answer, that the benches to the right or left, whichever it may be, are those of the first class. He then asks if they can show him the position of any boy on his form; 'Where does Tom Smith sit? Where, Jack Steady? Can any of you tell me where I should mark the fireplace on the board; where the master's desk, cupboard, &c.? I suspect we shall quickly get replies to most of these questions. This forms the first lesson.

"He begins the next lesson thus:—'Now I drew the schoolroom on the board yesterday; to-day I am going to take you out of the schoolroom, and draw the road in front of the school. But you see that as the board is not large enough to hold the road if I draw the schoolroom the same size as yesterday, I must draw it smaller.' He then takes his chalk, but instead of representing the benches ten inches long, he makes them five inches long, and thus there is room on the board to take in the road and some objects around the school-house. He will draw something like the following:—



of course keeping every thing in due proportion. He then questions just as before, 'Where does Joe Simmonds live? Where shall I put the pump on the board? Can any boy tell me where I should draw the market-place?' I imagine that the interest of the class will be excited, by every boy being eager to point out places that he knows, where his father's house is, &c. I need not remark how infallibly a boy will learn what he is thus made to take an interest in. In the next lesson the benches will shrink to two inches in length, and more of the surrounding parts are taken in, while questions similar to the above are asked again. In the fourth lesson they will be reduced to one inch, then they disappear altogether, and the schoolroom merely occupies a small space or dot. The village itself then gradually diminishes in size, till, when the lesson has arrived to a few miles from the schoolroom, it covers no more than a dot.

"I have but roughly described the process, but I trust I have said enough to show the probability that in this way you make a child comprehend what a map is; that it is a country drawn to a scale, necessarily small, because the paper would not other wise hold it; just as the master is obliged to draw the school-room and benches smaller and smaller as he wants to include a greater space on the black board. I am satisfied that many children, who are quite ready in answering geographical questions, have not the slightest conception what a map really is intended to represent. We who travel quickly, get sound notions of distance, as a journey of fifty miles is an object-lesson of the best kind. We are apt, I fear, to forget that the poor, who rarely travel, have some difficulty in realizing the conceptions of distance.

"I do not mean that the plan I have been describing should be pursued beyond the delineation of a few miles from the school-house. When you get beyond the range of the children's personal knowledge of the locality, it is useless. I simply put it forward as a mode of introducing a real notion of what geography is to a child's mind. This point being gained, the county, and then England, may be described in the ordinary way, but I altogether object to describing Europe before England, or beginning with the world as is frequently done; and I think that the figure and motions of the earth, tides, currents, &c., should be reserved for the very latest lessons.

"It requires some steadiness of hand in the master to draw a a map on the board in the way I have described, and many will perhaps find it expedient to do it previously to the lesson, though it will certainly produce greater effect in the children if drawn before them. Also, when the distance delineated extends to a mile or two from the school, the master will frequently find it difficult to draw the roads in their right places without the aid of the parish map, which in most cases may be easily obtained from the clergyman or churchwarden.

"I beg to remark that in giving such lessons on the earth's figure, it is generally worse than useless to tell a child point-blank, as I have frequently heard done, that the earth is round like an orange. An intelligent child simply disbelieves the assertion. The way to impress it on his belief is by explaining some of the reasons which make astronomers affirm it to be round. Thus I would tell them, we believe such to be its figure, because persons who travel in the same direction invariably come to the place from whence they set out; because its apparent flatness is easily explained by its great size, as the larger we draw a circle on the board the nearer does any point of it approach to a straight line; and because when the earth casts a shadow on the moon we see that the shadow is round. In a similar way I would give the children, as far as possible, the reasons for every truth that is taught them; and I have little doubt that knowledge so acquired and supported will be taken in more easily, and remembered with more tenacity, than what is imparted by simply making demands on the pupil's faith."

The following passage from the preface to Mr. De Morgan's Elements of Arithmetic is strikingly corroborative of the same doctrine:—"All who have been engaged in the education of youth are aware that it is a hard thing to make them think; so hard, indeed, that masters had, within the last few years, almost universally abandoned the attempt, and taught them rules instead of principles; by authority instead of demonstration. This system is now passing away, and many preceptors may be found who are of opinion that, whatever may be the additional trouble to themselves, their pupils should always be induced to reflect upon, and know the reason of, what they are doing. Such I would advise not to be discouraged by the failure of a first attempt to make the learner understand the principle of a rule. It is no exaggeration to say, that under the present system, five years of a boy's life are spent (partially) in merely learning the *rules* contained in this treatise, and those, for the most part, in so imperfect a way, that he is not fit to encounter any question unless he sees the head of the book under which it falls. On a very moderate computation of the time thus bestowed, the pupil would be in no respect worse off, though he spent five hours on every page of this work. The method of proceeding which I should recommend would be as follows: Let the pupils be taught in classes, the master explaining the article as it stands in the work. Let the former then try the demonstration on some other numbers proposed by the master, which should be as simple as possible. The very words of the books may be used, the figures being changed, and it will rarely be found that a learner is capable of making the proper alterations without understanding the reasoning. The experience of the master will suggest to him various methods of trying this point. When the principle has been thus discussed, let the rule be distinctly stated by the master or some of the more intelligent of the pupils, and let some very simple example be worked at length. The pupils may then be dismissed, to try the more complicated exercises with which the work will furnish them, or any others which may be proposed."

(*To be continued.*)

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL.

[This diary was not written for publication: it contains, however, told in a quaint way, much that is interesting and instructive.]

No. 3.

MIGRATION.

THE Poor Law is the generous wet-nurse of the Irish; it boards and lodges vast numbers of them who have no other claim than their utter destitution, which is often brought on by their own improvidence and incorrigible laziness. It boards and lodges and suckles them with broth —a supply which is not likely to fail to the really deserving, as the Saxon people are slowly becoming aware of some of the stock-exhausting causes, and the antidote is as slowly but as surely in the course of preparation, that, when applied, must cut off the unworthy and the idle, and thereby save an expenditure which is both unnecessary and impolitic. It is quite out of the course of nature that men and women should continue to be babies; the helplessness and interesting condition of childhood would lose much that is most delightful in its contemplation, were we to separate from it our hearty hopes respecting the future career and usefulness of those who are the objects of so much care and solicitude. But neither the Christian nor the financier can have any such feelings when he calmly examines the catalogue of Celtic pauperism; for these strong, healthy men and women expect to be suckled for life. They are the victims, it would seem, of a great political misfortune. All history affords proof that no nation or race has hitherto prospered when it has had to compete, or live in contact, with a superior race, or with one in a higher state of civilization. And, if the Irish people are to be saved, it must be by a stupendous, and, perhaps, a forced emigration, such as the historian has not yet recorded; and even then the remnant would perish, unless they were thoroughly amalgamated with the working races. Had the Celts, with swords in their hands, invaded England in the days of the Prince of Orange, and had they been successful, England at this present time would have resembled the England of William the Conqueror and his immediate successors. But the invasion was not attempted until more modern times, and that in a way unprecedented in the annals of the world. Instead of laying siege to our castles, they humbly ask for shelter in the tramp-rooms of our union workhouses, and they appeal to us by their sad rags and wretchedness, and not at the point of the sword. Is it because they are the dutiful observers of Christian charity and principle, as inculcated by our holy faith, that they thus have the warrant to supplicate? The statistics of Irish assassination and ingratitude forbid the possibility of entertaining such a construction of the case. . . . .

Some of those considerations which induce other people to travel, prompted three of my pupils to undertake a journey last week. The party was select, being composed of our very wildest boys. They started on Friday morning and returned on Monday afternoon, having visited Woolwich and Greenwich, and some other places thereabouts. I heard them joke very freely, touching the rusticity of the inhabitants, because they did not put up the names of their towns and villages, for the information of well-informed youths, who might wish to ascertain their distance from the centre of civilization, without troubling people who had other business on hand. Of course, this was a pedestrian tour, and our travellers were not provided with money or other necessaries. It was by no means a comfortable or profitable journey, as one night they slept under a railway arch, and on another in a butcher's cart in the street. Their slumbers in the vehicle were interrupted very early in the morning by a policeman; and, if he listened to the harangue which I am told one of them delivered on the sacred nature of a subject's liberty and the dangers which a paid official ran in tampering with rights so dearly cherished and so universally acknowledged, he must have been much puzzled to find a clue to their character or condition in life. Are we educating these boys for the purpose of confusing honest men, or for making them more expert in the prosecution of unlawful callings? Surely, the latter is not our object; but it will be the result of our efforts, unless we can find *employment* for those who are ready and able to do *useful work*. . . . . . . My acquaintance, Teddy M'Grath, has been a great traveller, although he began to ramble rather late in life; at a period when most men are disposed to settle. The troubles which are said to beset the Irish farmer, or his own inclination, may have induced him to take the first journey; however, I have only to narrate a few incidents in his history, some of which have come within my own knowledge, and I am the more disposed to enter rather fully into his particular case, as it is not a singular one, and may be taken on the whole as the model history of an Anglo-Irishman who depends on London sympathy. It is a mistake to suppose that the Irish who have settled amongst us are of the lowest class of peasantry; such people remain at home, and those with whom we have to do are usually broken down farmers, or small tradesmen from the country-towns; or they are disabled navvies, or great lazy men who are too sluggish to work, and improvident when they earn money. The credit, therefore, which the Irishman has acquired in England, as the possessor of a sort of well-informed intelligence, is by no means due to the mass of the Irish people. And their trading propensities may often also be traced to their former position and associations as well as to their rooted aversion to steady labour. . . . . On Sunday last, for the first time in my life, I saw a Jew digging the soil; his implement of husbandry was a knife, and his field of labour a flower-pot. . . . .

I must return to Teddy M'Grath. The time has been when he had a tidy farm, an indulgent landlord, and "a good bit of money in the bank." Unlike many of his countrymen, he remained unmarried until he was forty years of age. He then took to wife a girl of seventeen, the daughter of a respectable tradesman, "who kipt a power of men." With his young wife he emigrated to America. From all accounts, he saw "a power of travellin in Amireky;" for he visited the cities of Quebec, New York, and New Orleans, in search of an easy life, and found it not; at last, in the valley of the Mississippi, he was stricken with an ague; his strength and spirits broke down under this affliction, and, after a residence there of three-

and-a-half years, he returned to Ireland. He had one daughter born in America, and with his wife and this child he arrived safely at his native village, and again entered on his trade of farming,—being still possessed of some little capital. At this occupation he continued for thirteen or fourteen years; the "troubles of Ireland" then overtook him; shortly afterwards his wife died, and he sought a home in the workhouse for himself and his six children. But even there he could not find rest and an adequate supply of food, for "the real troubles of Ireland" had by this time reached the workhouse also. Gaunt famine appeared with its attendant horrors, worse than actual starvation, in its Irish-union-workhouse form, where its miserable victims dragged out a lingering existence, by the scanty dole of provisions which kept them alive without satisfying the cravings of hunger. Such has been the state of affairs as described to me, and under this ordeal Teddy did a cruel thing. In company with his eldest daughter, a girl about eighteen, he deserted from the workhouse and his five other children, and as he now wanders in the streets of London trusting to precarious charity, he feels thankful that his circumstances are improved, and that he is not in an Irish union. . . . .

Teddy M'Grath is quite cunning enough, and, like many others in better circumstances, just knows law enough to get himself into hot water occasionally. A short time ago he made himself so conspicuous to a board of guardians, by "standing up" for the "rights" of his daughter, that they, to save themselves further trouble, determined that both should be sent "home." And afterwards they were, with some little trouble, shipped in a steamer at London Bridge. When they arrived at their destination in Ireland, Teddy called on the mayor and described his circumstances. The mayor having heard the case, declared that Teddy was an injured man, and that his daughter was an *alien*, and that the English were poor lawyers. Success begets confidence—Teddy thought more of himself, and of his wisdom, than he had ever done before; a mayor had agreed with him on a disputed point of law; his spirit rose "to the noble argument," and he soon procured funds to return again to London. On this occasion he just slept two nights in Ireland, and he may now be seen every day in Piccadilly, carrying in his hands a packet of lucifer-match boxes, which he professes to sell to the nobility and gentry. The "alien" is no longer an object of interest to either the poor-law guardians or the charitable, for she has a comfortable place, as servant of all-work, n a decent house in Camden Town.

SPRING AND POSITION.

RAGGED SCHOOLMASTERS, WHAT THINK YOU OF THE SPRING? I almost am tempted to think that, were it possible to defer my summer for this year, I would gladly accept a postponement of the season as a boon. I look forward to the fine weather with considerable dread; for already, when the sun shines through our dismal windows, sickly as it does, I see in the dusty beams the sure forerunners of unbearable stench and malignant fever. Our foreign missionaries sometimes detail their trials, and picture the hardships which they have had to endure. But I would much prefer teaching Divine truth in the wilds, than inhale the nauseous effluvia thrown off by the filthy garments worn by our Ragged School scholars. Wash them as we will, this is an evil which we cannot altogether obviate, as many of them sleep at night in the clothes they wear by day. Even the atmosphere in the schoolroom of a union workhouse is as sweet as a well-perfumed drawing-room when compared to that in which we labour. . . . . . Our pupils have at least one redeeming quality, which cancels much that is disagreeable—and that is their independence. And, curious enough, these children not only prize their liberty, but they are as great pretenders for "position" as the veriest upstart in the world of fashion. When I am called to settle some of their disputes, I feel myself led to the conclusion that they are influenced by a kind of natural instinct, and not by the example of society in the outward world; for of its distinctions they have no knowledge beyond the fact, that there are people who work and others who do not, and that some are respectable and that others are not; and it would be hard to convince many of them that it is possible to be both poor and respectable. If they speak of respectable people, they always mean rich people, or people who are well to do in the world. And yet they are prone to classify themselves, and they do this, as might be expected, without delicacy; thereby proving the man of the world's aphorism, that those who show they have a "position," have *none*. . . . A boy, who was brought up to me for fighting, gave the following explanation to lessen his fault:—"Vy sir, it's this here; he said as how my father's a tinker and he aint, he's got a shop and aint no tinker; that's vy I punched his nose, I did." . . . . . I have just heard that one of our girls has improved her "position," and has been sent to a "boarding-school" by a lady of note. . . . We have a little pupil who has been lately imported from the County of Limerick, and I know that he comes to our school as much for protection as for any other reason. Those who have been over-longer are much given to persecute the new comers, who are distinguished for several months by the cognomen of "Greeks." One of my second-class boys made this young stranger's acquaintance in the park, by knocking him down and taking off his shoes, which he intended to appropriate to himself; but finding they were too small for his own use, he threw them at the head of the owner, and went away coolly whistling a popular air. . . . .

When visitors who have a "position" to maintain come into our school, I recognise them at once by a way they have of letting you know that they are well versed at least in the elements of geometry. They place their chairs with scientific exactitude on the spot which is farthest removed from the children. Of anything so low as a little dirty boy they would not take the least notice, nor can they see that he has any poetry in him; but it so happens that in certain circles, just at present, it is the fashion to know something of ragged boys, and to accomplish this, people sacrifice much personal feeling. . . . . I am at a loss to understand how any clergyman, who has a proper idea of his holy calling, can feel himself justified in discharging his duty by a lay deputy; or for what reasons the Church gives its sanction to such an arrangement. If it were the intention to bring the Church and its ministers into a false position, so as to estrange the poor, and make them understand indirectly that they are beyond the pale of the Church, and disqualified to enjoy her solace and her privileges on the same conditions as the rich, then a better plan could not have been adopted to secure that end in a quiet manner. But if the promoters of this system had higher and better objects in view—as I have no doubt they had—they have adopted a system which will work far more harm than it ever can do good. To discuss its orthodoxy is not within my province, I have only to record my own opinion on the subject—an opinion which is also held by many who are competent to judge. . . . . .

Our "Angel visits" are not "few and far between," we have received many such lately. Lady —— may be said to have clothed all our scholars—few of them are now ragged—so liberal has been the supply of clothing which she gave us, and we have *entertained* some other aristocratic ladies; . . . . . but visitors of this description are gentle in their manners; they never disturb the school, or make a fuss, and they are, in short, altogether unlike people of "position."

Marriage.

If early marriages are attended with some disadvantages, yet, the good which results therefrom is of far more importance than the poverty which such marriages are said to entail. As a class, the Irish are more virtuous and healthy than the artisan class of English people in London; I have only two or three sickly or scrofulous families in my school. A visit to almost any national school, in London especially, will satisfy any one who is interested in the subject of health as connected with morals that the same cannot be said of them. It is well known that the outcasts of London are descended from the lower middle class, and that they are chiefly the offspring of sin and debauchery, and that the lowest class of Irish girls seldom take to such courses. . . . . . Were marriage looked upon by these people as a merely civil ceremony, it would soon cease to exist amongst them; but this is not likely to occur, as the Priests seldom neglect their duty when they have to administer the discipline of their Church. . . . . I could say much on this head that would startle many of the supporters of the new marriage bill; and of the mischief that will surely be the result, (amongst the poor as they are now housed the evils are inevitable,) if the wife's sister is placed in the condition of any other single or marriageable woman as respects a sister's husband. But whilst I refrain from the discussion of that question, I feel myself called upon to state one fact which bears on the subject, and that is, that I have taught a child his alphabet who is one of an illegitimate family of three children, whose reputed father is the husband of their mother's sister; and that both the women are alive, and that the wife is the mother of a family to her husband. . . . . . .

I am almost certain that the "Latter-Day Saints" have not a single convert from the Roman Catholic faith, although they wash numbers of dissenters weekly, and even some few ignorant people who have professed themselves of the Church. Were it not that the nuisance might be made more popular to some bad persons by so doing, I could name twenty-five places in London, and its immediate vicinity, where these people hold stated meetings twice or thrice a week; and the chief attractions which they hold out to their ignorant and debased followers appear to be the facilities which they afford for the contraction of illicit connections under the sacred name of marriage. Very many have read of Joe Smith and his doings in the backwoods of America, who would not have credited the supposition that the monstrous fables which he propagated could ever have been believed in England. But this is no longer a matter of doubt, as there are thousands in London who profess to believe in the book of Mormon, which is regularly expounded by ANOINTED elders. This is just another proof that the people are by no means so well educated as they are sometimes supposed to be, and that even their stock of common sense has been much over-estimated. As a specimen of the style in which "a great gun" of the Mormons addressed his silly auditors, I noted the following:—"Reasoning from *analogy*, I hold the miraculous abduction or translation of the plates, from which the book of Mormon was printed, as incontestably proved as is the doctrine of the Ascension, in which I am a believer. In the one case the body went up; in the other, the plates went up." . . . . . . He also asserted that Joe Smith was as great a prophet as ever lived, and that in the year 1830 the world only contained six godly men, the said Joe and five others. He *proved* his prophetic character by telling a story about the "Gentiles" in the Missouri territory having given the Mormons notice to "quit;" and how Joe stood up in the midst of the popular fray which attended that intimation, and prophesied that the temple of Zion would be built near the spot where he then stood, and from which he and his party were so uncharitably expelled. Next came a long rigmarole on persecutions—snow-clad prairies—bloody trails—exhausted teams—short rations—and wanderings like those of the Israelites in the desert. At this point his lungs gave in, and he assumed a low whining tone of voice to describe the return of the triumphant Joe and his Mormon horde to "the old location" amidst reiterated "hymns of joy." And, as if to celebrate the event and render the service more impressive, he sang us a song, from the pulpit where he stood, to the tune of "BIDDY, THE BASKET-WOMAN," which recounted the various victories of Mormonism, and in which allusion was made to its success in England. This ditty was divided into twelve verses, as nearly as I could guess, and each verse had a different recitative or chorus, in which the congregation joined; and as they sang, or rather chanted, this Yankee antistrophe, the girls clapped their hands right merrily, the men tramped with their feet, and the nursing mothers rocked about with their young children in their arms. . . . I was called to this gathering to hear something that would do for the poor, as I was told, that which no statesman can do, and that which Christian Catholicism and Evangelism have not done; and which something was to raise all men to a decent if not an equal station—and I heard nothing but degrading sophisms which may be fully and shortly expressed by the word *blackguardism*, as it embraces the full scope and tendency of their arguments. . . . . A young man closed the meeting by making a short address, or imprecation, in which the words *holy demon* were most notable.

GENERAL EXAMINATION OF TRAINING SCHOOLS.

CHRISTMAS, 1849.

XV.—GRAMMAR, LOGIC, AND ENGLISH LITERATURE.

SECTION I.

1. OF what elements does our language as at present spoken consist? Which is its prevailing element, and whence derived?

2. Whence, and at what time, was the mother tongue of the present English introduced into this island? In what districts has the language which it displaced continued longest; and how do you account for its surviving in those districts longer than elsewhere?

3. Name the different stages of change in our language, and their periods from its earliest introduction to the present day.

4. Name the principal writers of the 16th century, and of the 19th, previously to 1830, with the subjects and characteristics of their writings, and a short sketch of the life of any one of them. You are at liberty, also, if you choose, to write out a few lines which you admire, from Shakspeare, Milton, Pope, Cowper, Scott, or J. Montgomery.

SECTION II.

1. Give the meaning and derivation of the following words:—Anachronism, Ancillary, Anodyne, Bedlam, Beefeater, Damsel, Damson, Indenture, Meander,,Philippic, Tantalize, Twist.

2. Give the meaning and etymology of the parts of speech.

3. Distinguish (with instances) between primitive, and derivative, and compound words; regular and irregular verbs; transitive and intransitive verbs; principal and auxiliary verbs; frequentative and diminutive words; orthography and orthoepy.

SECTION III.

1. What is the difference between—A'bstract, Abstráct; Cónserve, Consérve; Présage, Preságe; Prémise, Premíse; and generally how do you find dissyllables similarly spelt to be affected by the transfer of the accent from first to second syllables?

2. To what inflexions are nouns, verbs, and adjectives respectively subject?

3. What letters in our alphabet are redundant—what deficient? How many simple elementary sounds have we, and how many simple elementary characters?

4. Name the chief figures of speech, with illustrations.

SECTION IV.

1. What are the *terms* of a proposition?

2. Give an instance of the simplest form of a negative proposition, and analyze it.

3. Show that adverbs, by themselves, cannot constitute any of the parts of a proposition; but that, in combination with certain words, they may do so subordinately.

4. What is meant by the distribution of a term? In what way does the conversion of a proposition depend upon the distribution of its terms? What is an undistributed middle in a syllogism; and whether do you consider an undistributed middle or an illicit process the greater fault?

5. How does deduction differ from induction, and to what kinds of reasoning is each applicable? Give examples of such application.

Section V.

Write a paraphrase of the following in English prose, and parse the words in italics.

> "*Promise* was that I
> Should Israel from Philistian yoke deliver;
> Ask for this great deliverer now, and find him
> *Eyeless* in Gaza at the mill with slaves,
> *Himself* in bonds under Philistian yoke:
> *Yet stay*, let me not rashly call in doubt
> Divine prediction; *what* if all foretold
> Had been fulfilled but through mine own default,
> Whom have I to complain of but myself?
> *Who this high gift* of strength committed to me,
> In what part lodg'd, how easily *bereft* me,
> Under the seal of silence could not keep,
> But weakly to a woman must reveal it,
> *O'ercome* with importunity and tears.
> O impotence of mind in body strong!
> But what is strength without a double share
> Of wisdom? Vast, *unwieldy*, burdensome,
> Proudly secure, yet liable to fall
> By weakest subtleties, not made to rule
> But to subserve where Wisdom bears command."

XVI.— ENGLISH GRAMMAR AND LITERATURE.

Section I.

1. Enumerate and classify the elementary sounds in the English language.
2. How are mutes divisible? Name the corresponding sharp and flat mutes.
3. What combinations of letters are unpronounceable, and why?
4. Write out the principal rules of euphony, with examples.

Section II

1. State the rules for the formation of the plural of nouns, with examples, and the reasons.
2. What do abstract nouns denote, and by what terminations are they formed?
3. Give the etymology or derivation of these words—which, Burg, bootless, Cheapside, Charing Cross, uncouth, Fleet Street, Sheriff Hampstead, calculate.

SECTION III.

1. How many kinds of propositions are there? How many necessary parts in a proposition? Give instances of each.

2. Explain clearly the rules which determine the case of relative pronouns, with examples.

3. Give rules by which you can ascertain to what part of speech convertible or doubtful words are to be referred.

SECTION IV.

Give a simple and exact paraphrase of the following passage:—

Now my co-mates and brothers in exile,
Hath not old custom made this life more sweet
Than that of painted pomp? Are not these woods
More free from peril than the envious court?
Here feel we but the penalty of Adam,
The seasons' difference, as the icy pang
And churlish chiding of the winter's wind;
Which when it bites and blows upon my body
E'en till I shrink with cold, I smile and say
This is no flattery—these are counsellors
That feelingly persuade me what I am.
Sweet are the uses of adversity,
Which like the toad, ugly and venomous,
Wears yet a precious jewel in its head.
And this our life, exempt from public haunt,
Finds tongues in trees, books in the running brooks,
Sermons in stones, and good in every thing.

SECTION V.

1. Give an account of the gradual introduction of the Anglo-Saxon language, and name the principal literary productions in that language.

2. In what points does the English language at present resemble or differ from the Anglo-Saxon?

3. What modifications did the language undergo from the battle of Hastings to the reign of Elizabeth?

SECTION VI.

1. Name the principal poets who lived under the Tudors, and their most important works.

2. Give a brief account of the principal historians of England.

3. Characterize the writings of our great essayists.

4. What modern writers have contributed most to the formation and development of the character and minds of English women? Give some account of any of their works with which you may be acquainted.

XVII.—HISTORY AND BIOGRAPHICAL MEMOIRS.

SECTION I.

1. Describe the houses, agriculture, and social habits of the earl Britons. With whom had they any commerce? In what articles?

2. Give an account of the invasion of Britain by Julius Cæsar.

3. Give some account of the Danish invaders. Who was the first, and who was the most distinguished King of Danish origin?

4. Describe the condition of England in the reign of Edward the Confessor; and state the circumstances under which Harold and William of Normandy claimed the throne.

Section II.

1. Give an account of the domestic habits, martial sports, and amusements of the Norman period.

2. Describe the character of Richard I.

3. Name the Queens of the Plantagenet line, and briefly describe the character of the most distinguished.

4. Under what circumstances did the kings of England acquire and lose their French dominions?

Section III.

1. Give some account of the education and habits of English ladies under the Tudor line.

2. What effects did the dissolution of monasteries produce upon the people? Give an account of Cromwell, Earl of Essex.

3. What circumstances led to the extension of commerce under the Tudors?

4. What efforts were made to check the growth of London under the first Stuarts, and with what success?

5. State any circumstances that tend to prove an improvement in civilization, morality, and happiness in England, since the latter part of the 17th century.

Section IV.

1. Describe the character and domestic habits of Queen Anne and her elder sisters.

2. Give some account of two or more of these persons, Mrs. Hutchinson, Anne Askew, Margaret Beaufort, Miss Edgeworth, Jeanne d'Albret, Anne Countess of Clifford.

3. Give an account of the life of Jewel, Hooper, Sir Thomas More, Felix Neff, Schwartz, Bishop Wilson, George Herbert, Bishop Ken, Archbishop Leighton, Bishop Heber.

IDEAS ON PHYSICAL GEOGRAPHY.

(Continued from page 479, Vol. VII.)

CHAPTER XXIV.

411. The peninsulas south of the continental mass of the old world are ranged upon a line directed from east to west, rising somewhat towards the north.

412. Africa is, as one immense peninsula, ranged in the same line. Moreover, if the chain of peninsulas admits there a link differing from the others, the facts deduced become modified in consequence.

413. Each of the great peninsulas gives birth to a worship. Egypt

has produced its own, in like manner as the peninsulas. But there is a central or middle spot for the peninsulas; a spot situated in the Mediterranean between Asia, Africa, and Europe—Judea.

Around this spot the principal worships have had birth, and God has placed there the cradle of the celestial doctrine.

414. Greece has produced a lofty doctrine, and has given an important modification to Christianity. Italy has given another; Spain another. Spain has produced Loyola; and is not Spain, with regard to America, what Rome was for Spain itself and for the Gauls?

415. Rome is the peninsula town the most fortunately situated within a basin, as well as the most northerly of all the ancient civilized world.

It is one of the causes why Rome has acted the most important part.

416. That which has rendered the conduct of Spain less important and less durable than that of Italy is, that Spain has too many central lands. Madrid is somewhat more southerly than Rome; Spain is upon the ocean, and has no neighbouring country westward, as Rome had in the Gauls. Spain has no interior navigation.

Doubtless, however, the Spaniards have left traces in America as deeply marked as the Romans in Gaul.

The Spaniards, like the Romans, have been conquerors and converters.

417. Thus, the worship and the education of people have advanced from peninsula to peninsula, from east to west—ever gathering strength, and receiving a celestial ray at the nucleus of the three continents.

418. The observation, indeed, is true—that they have nearly followed the ecliptic in its inclination to the equator; and, as if each peninsula should have its doctrine, Odin has preached in Scandinavia.

419. Moreover, Odin was originally from Persia.

420. Wherever there is vivacity of intelligence, energy of mind, difficulty in supporting life, there is incredulity to mystic religions.

421. There is for each epoch a dominating zone: thus, Egypt and Central Asia have had their period of brilliancy: then Greece and Italy; then Spain, Switzerland, Savoy, Venice, Turkey; then France, Austria, and Poland.

Now England, Prussia, Russia will perform the most important part.

Successes advance westward, in proportion as they ascend to the north; they follow the sea-shore.

Examine the north: Russia hems in Turkey; Prussia, Austria; and England, France.

There is a sensible movement from the north towards the south.

422. The men of the north impart coolness to the blood of populations, and invigorate the people of the south.

When civilization shall have penetrated to the ices of the pole, what will happen?

423. With the lapse of time, northern manners become softened; morasses and mountains become practicable; the men of the north acquire dexterity: but the men of the south do not acquire virtue. Civilization then mounts northward, passing over mountains, penetrating to the heart of morasses.

424. Thus, a people do well to move the capital northward, in proportion as civilization expands in that direction.

CHAPTER XXV.

425. Families, societies, nations, I require you, force no one to emigrate. Never permit that any of those who quit you should carry away with them hatred, vengeance, and those interests which are contrary to your own happiness and repose.

426. Exiles and emigrants return to their own country, they or their influence; that is to say, the opinions and the sentiments which they have carried with them from their native land.

This law assists in explaining the flux and reflux of peoples.

427. It has been already observed, in natural sciences, that the people have opinions of which the foundation is true, but to which they append absurd accessories.

Half-knowledge denies and maltreats popular opinions; real knowledge illuminates them, and demonstrates their truth.

428. Thus, when a being has suffered great injustice upon earth, the body may indeed pass into the tomb; but the soul remains, causes its voice to be heard through surviving friends, and calls still for vengeance by the remembrance of suffered wrongs.

Ishmael fled into Arabia, a child of the desert, led by a mother who was abandoned by the world; a crust of bread and the burning sands their only prospect for the future.

This event, twenty centuries after, caused rivers of blood to flow in vast and distant countries.

Emigrants from Asia, driven forth by the Greeks, founded Rome—Rome, which subdued both Asia and Greece.

Examples are numerous:—

French emigrants have betaken themselves to the very confines of Europe. The Scandinavian, and the Cossack of the Don, assisted in taking military possession of Paris.

There are many other instances of exiles and emigrants who have fled into distant lands. Let us wait the results: they are sure as the recurrence of the seasons.

A French exile transforms one of the empires of India; what will be the consequence of it? England would, perchance, have gained much had she bestowed at first a liberal pension upon the civilizer of Lahore.

429. Exile is one of the great causes of the march of civilization.

430. The Greeks, and the people of the east, looked upon the countries of the north and west with fear and dislike, as spots to be avoided. This opinion peopled the north and west with unfortunate and vile, and with energetic men.

The Greeks gave to the western rivers of Italy names corresponding with their infernal gods: Scylla and Charybdis were at the entrance of these countries.

The Greeks had a sort of fear of the Gauls, of Germania, and of Scythia; as the Asiatic Greeks had at first a fatal opinion of European Greece.

This opinion contributed to the grandeur of Rome.

431. Languages, religions, arts, have always moved from south-east

to north-west; but their passage has been more rapid by sea than across lands.

England, Ireland even, were visited by learning before the interior of Gaul.

Knowledge, the arts, religions, follow the same track as war, as commerce, as industry, as curiosity, or as exile.

432. A people in movement, either for the purpose of war or commerce, or to find amicably a temporary dwelling, meeting nearly everywhere a difficulty of effecting a settlement, will journey on to the very confines of the world. It is one of the reasons wherefore the two extremities of the great Europo-Asiatic continent bear the four greatest towns of the world—two at the east, two at the west.

Already it is the eastern extremities of America which carry the most numerous population.

433. It is from the sea-shore, and above all from mountain heights, that the ardour for incursion and for conquest arises.

According to this law, America ought to be discovered by an Englishman, by a Frenchman, or by a native of the Spanish peninsula. There was a time, however, when America was thought to have been discovered by a Genoese. This fact was contrary to an historical law.

Primordial laws may help to verify history.

434. Let but a people frequently see a country from afar, or the road which conducts to it; or let but their thoughts and imaginations be frequently engrossed with it; and the desire will arise to conquer it, or to travel to it.

The two preceding laws suggest the thought that America was discovered by a habitant of the western extremity of the Pyrenees. History has indeed confirmed this fact.

435. The Spanish character has influenced Southern America, as Rome influenced Spain and Gaul.

436. Geographical laws would be of the greatest utility to governments, and perhaps henceforth they will employ them.

Thus, had the French government been conversant with primordial causes, it would not have burdened France with expenses in the acquisition of Canada; because Canada is situated at a higher latitude than France, and naturally fell to the lot of England, or to some northern power.

Already the struggle is kindling in America between the southern provinces and the north.

The negroes of America, utterly sacrificed as they are to the will of others, are not so numerous as elsewhere at a high latitude. It is, because they are from the south.

CHAPTER XXVI.

437. The different idioms spoken upon the earth are subject to geographical laws.

They have followed people in their march: they have advanced from east to west, inclining northward; because the middle line of the mass of lands has that direction.

Populations bordering on each other generally speak languages which have certain peculiarities common to both.

Thus, the German and Greek have, in the grammar, a great resemblance.

438. It is by the spoken languages that we can determine the intercourse, the origin, the individuality of a people, of divers classes of society, and of men considered individually.

439. Seek in the organs of speech the first causes and the laws for the alteration of words; whether it be in the derivatives, or in the transition from one tongue to another.

Cold contracts the lips and teeth: you will hear muffled sounds and hissing articulations in the north.

440. Seek what letters children alter so as to pronounce them like other letters, and you will learn much of etymologies, much of the origin of words.

Thus, children pronounce C hard as T; they change S into T, and reciprocally; they glide over the middle vowels and some of the consonants. All this you will perceive in the languages of the north, in the Greek language, in the French language spoken by the people. But, what is still more remarkable, we will not permit of these changes, these alterations, which we signalize as unworthy well-bred people. The Greeks, whose language is a *chef-d'œuvre* of reasoning and elegance, had of these very changes and omissions made laws.

To what does this lead us? This fact is intimately connected with manners, and consequently with geographical characteristics.

We live but little in the public thoroughfare, there is too much rain and dirt during eight months of the year. We associate little with the common people.

Here, again, we acknowledge how human wisdom may be brought to bear; and (let us repeat it) the rain of heaven has more power than the greatest legislator; it has often arrested revolutions, and it plays the most important part in the history of empires.

Spoken idioms depend also upon many other laws.

It is impossible, then, to classify these laws perfectly.

441. The fine arts derive something of their character from primordial causes, from the character of times and places.

It is easy to know what particular art ought to flourish in this or that spot. Thus, the form of monuments and of habitations may be sometimes foreseen.

It is demonstrable as a theorem of geometry, that the obelisks and the pinnacles of our steeples ought to have had their origin in this or that country.

Writings even are characterized by the spots, and by the physical accidents in the midst of which they have been composed.

There is a striking resemblance between the melody, the measure of the periods of J. J. Rousseau's writings, and the sound, the movement, and the fall of the waves of the air.

The number of syllables is subject to special laws for each writer, and for each position in which he has written. That, you will say, is a strange opinion. That may be; but the facts which I assert will have influence on public studies.

(*To be continued.*)

Correspondence.

(The Editor begs to state distinctly that he is not answerable for the opinions of his Correspondents.)

METHODS OF GIVING LESSONS ON OBJECTS.

(*Continued from page* 98.)

1. It is necessary to observe that, in giving lessons on objects, the children should be assembled, either in a gallery, or in parallel desks. It is impossible to satisfactorily impart instruction on objects to a number of pupils according to any other arrangement. Some have recommended the expedient of arranging the forms on which the children generally sit in parallel rows; this is certainly preferable to having them either in *squares* or *semicircles;* but it is infinitely inferior to the plans recommended above. Let us suppose that the children are arranged in classes with parallel desks,—the master should stand at some distance from the front row or seat. He is thus better able to take in the whole of the children under his eye: he should, also, concentrate them as much as possible; for the more they are extended to his right and left, the less are they under his control and the greater exertion of voice is necessary. These two evils should, as far as practicable, be avoided by every master for his own sake.

2. There should also be a good *large black-board,* placed on an easel with *four legs* (not three); and on this the master should make a constant practice of writing down the most important qualities of the substance which constitutes the lesson for the day, or the points that ought specially to be remembered by the children.

Thus, in giving a lesson on *matter,* there should be written on the board the word itself. Then the children may be told that all matter is composed of *atoms;* that it occupies *space;* that it may be classified under the heads of *organic* and *inorganic;* that it is found in three different states, *solid, liquid,* and *aeriform,* &c. The words in italics are those that should be *legibly* written on the board *under each other.* This serves a double purpose; the children not only learn how to spell the *technical* terms, but the lesson is better remembered. It is a great mistake in teaching, to exercise the *ear* only; the *eye* should also be continually called into exercise: *for nothing should be taught through the ear alone, that can be taught also through the eye.*

> " Segnius irritant animos demissa per aurem,
> Quam quæ sunt oculis subjecta fidelibus."

3. The specimens of notes are such as we suppose a master would make for himself before giving a lesson. These notes are intended to serve as aids to his recollection of the subject which he has previously studied and mastered. By degrees, he will be able still further to reduce these, so as to occupy a smaller space. This can only be acquired by practice. He must not *read the notes;* they are only to be referred to, either to assist the memory in reference to facts or to the

consecutive order of the points to be noticed. They should be written out neatly, and placed on a stand in front of the teacher, and as nearly as possible in the centre of the classes to be taught; keeping, however, the distance from the front seat which has already been noticed.

4. To properly carry out a complete series of lessons, a good cabinet or selection of objects is necessary. This, however, will, for a great majority of schools, be impracticable on account of the expense. Still every master will find little difficulty in obtaining a vast number of mineral and vegetable substances; and prints of the most useful and common animals can now be procured at a cheap rate. I wish, however, to direct the attention of every master to the necessity of making for himself a collection of objects suited to his purpose. Every locality will furnish some animal, vegetable, mineral, or manufactured substance; the children and the parents may be made, nay, will take an interest in seconding the exertions of the master: and this is a matter of no small importance. Things which before may have altogether escaped their notice, or have been but lightly regarded, will thus become invested with a new importance, since they are made the vehicles of enlarging their knowledge and developing their intelligence.

5. In the country, how easy it is to collect specimens of the different sorts of grain, of wood, of roots, of leaves, &c. And what an interesting and instructive lesson could be given, for instance, on the variety observable in the forms of the roots of plants and vegetables—their adaptation to the soil and locality—the uses to which they are applied, as food or medicine, both to man and beast. Again, take the leaves; compare them—some are one shape, some another; some are smooth, others rough: mark the variety in the edges, the veins, the colour on the upper and under side; the time of their appearance; when they fall off, and why; their importance in the animal economy. And, in a mining or manufacturing district, every master might with ease reap a rich harvest of objects, not only in their raw and manufactured state, but in every stage of that manufacture—processes which, from the skill, labour, and intelligence exercised upon the completion of the article, have raised England to her high pre-eminence among the nations of the earth.

And the children whom that master is addressing are the sons of those very men who, by their sinews and their skill, have helped to make our country what it is. And in the course of time these youths will occupy their parents' places, and with their heads and arms will make machines of most ingenious form, will work our mines, and plough our fields: then cultivate their intelligence; exercise their understanding; teach them to be wise, upright, honest; to be obedient subjects, and to uphold the honour and integrity of that empire of which they form an integrant and important part. The youth, faithfully and properly educated,

"To NATURE's voice attends, from month to month,
And day to day, through the revolving year;
Admiring, sees her in her every shape;
Feels all her sweet emotions at his heart:
While TRUTH, divinely breaking on his mind,
Elates his being and unfolds his powers."

HEADS OF A LESSON ON A VEGETABLE.—THE WALNUT-TREE.[*]

1. Particulars regarding external appearance, quality of the wood, &c.
2. Where it is found.
3. Particulars concerning propagation, growth, &c.
4. The uses to which it is applied—both as regards the wood, the fruit, the juices, &c.

SPECIMEN OF NOTES ILLUSTRATIVE OF THESE HEADS.

1. Tree handsome, form of branches beautiful; when young, of little value, liable to be attacked by worms; wood soft and flexible when young, beautifully veined and durable when older; takes a fine polish.

2. Came originally from Asia; abundant on shores of Caspian Sea, China, E. of France, S. of Germany; in England not so many trees as formerly.

3. Propagated generally by seeds; sown in autumn; husks not taken off,—these said to protect them from vermin; nuts planted about six inches apart; tree grows rapidly; when seven or eight feet high fit to be transplanted to a permanent situation; those raised from seed bear no fruit till eight or ten years old; time it lives unknown; best time to cut it down when fifty or sixty years old.

4. Timber used for furniture; for stocks of fire-arms; time of war good tree worth several hundred pounds; S. of France peasants make wooden shoes; ripe nuts used as fruit; green nuts as pickle and catsup; oil of walnuts used in medicine, in painting and polishing wood; leaves and husks when steeped, water used to kill insects—also in dyeing wool, hair, skin, &c., a brownish colour; gipsies said to stain with it stolen children.

Romans flung walnuts among the people when any one was married custom still in S. of Europe, use however nuts and almonds.

HEADS OF A LESSON ON A MINERAL SUBSTANCE.—LEAD.†

1. Particulars regarding external appearance, qualities, &c.
2. Where it is found.
3. How obtained, or process of manufacture.
4. Uses to which it is applied.
5. Facts to be impressed (if there are any remarkable).
6. Countries to which it is exported, &c.

SPECIMEN OF NOTES ILLUSTRATIVE OF THESE HEADS.

1. ‡ Pale-grey colour, flexible, soft, easily cut, not elastic, stains paper of a blue colour.

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[*] Useful books for the teacher are—Vegetable Substances: Ch. Knight. Book of Trees: Parker.

† Useful books for teachers are—Minerals and Metals: Jackson on Minerals and their Uses: Parker, West Strand.

‡ *This a piece of lead.*

* Heavy, brilliant, globular †, brittle; called galena.

2. Principal lead-mines in England and Wales are in Cornwall, Devonshire, Derbyshire, Lancashire, Westmoreland, Cumberland, Durham, Flintshire, Montgomeryshire; in Dumfriesshire, Lanarkshire, Ayrshire, and Argyleshire, in Scotland; at Galena, in U. States; in Spain; in Ireland; Germany, &c.

3. Galena obtained from mines; found in beds and veins, in some instances, thick and extensive; when taken from mine combined with other substances; first process is crushing and washing the ore; it is then smelted; the melted metal run into iron pans, then ladled into moulds; now called pig-lead.

When galena contains large quantity of silver, this extracted by a process called refining.

4. Formed into pipes, tubes, sheets, shot, &c.

Sheet-lead used by Romans to cover the hulls of vessels; used by us to cover roofs; formed into tanks or cisterns; made to any thickness by being passed between steel rollers.

Leaden pipes used to convey water; gutters and pipes to carry off the rain from the houses.

Bullets for muskets, pistols, &c.; shot for sportsmen, this mixed with arsenic to harden it; shot made by pouring the melted metal into an iron vessel full of holes; falls about 130 feet into a vessel of water; afterwards sorted; shot-towers on banks of Thames, near Waterloo bridge.

Lead and antimony form *type-metal;* mixed with tin, it forms *pewter* and *plumber's solder.*

White-lead, a preparation of lead, is employed in painting, in making putty, &c.; *litharge,* is used in the manufacture of glass, in glazing earthenware; *sugar of lead,* in surgery and in calico-printing.

5. All salts of lead poisonous; many acids easily dissolve lead; dangerous to take liquids out of leaden vessels; not safe to use water that has passed over leaden roofs; painters, plumbers, and others using preparations of lead, are liable to paralytic affections, &c.

6. England exports lead to France, Holland, Russia, Brazil, British N. America, India; value of exports, in 1847, was 179,344*l.*; number of people employed in the mines and the manufacture of lead, in 1841, was 12,712 persons. R. M. A.

(*To be continued.*)

BOARDING-SCHOOLS FOR POOR GIRLS.‡

MY DEAR FRIEND,—In answer to your letter, allow me to state the case on which you ask my advice. It is this: "You are no longer young, and require something to interest your mind, and, necessarily, your time, beyond the trifling pursuits which have hitherto engaged you. You find doing good in a desultory manner unsatisfactory; you have no interest in life, and you begin to fear that life will soon be a burden to you. If you were a Roman Catholic, you would seek the cloister, and if you belonged to the ultra Protestant party, you would seek excitement in the tea and Bible party; but you are neither, and therefore your life is passed in the dull routine of daily duties, and you trust that these 'will furnish all you ought to ask.'" And so they will furnish all we ought to ask; but they will not furnish all that God in his mercy gives us. They will not often furnish happiness after the season of youth is passed, at least not to thinking minds and feeling hearts. There is in the female mind a longing desire to do good to some beneath her, which, if not exercised on her own family, finds its natural vent in kindness to the children of others. A woman with heart and intellect must love children, and this love enables her to guide and teach them in a very different manner from paid instructors. This, therefore, is the talent I am anxious to persuade you to devote to the service of God. Do not think me presumptuous, if I say, do as I have done. Give your time, your thoughts, your prayers, to the formation of a boarding school for girls. Why a boarding school? you will say. "There is a very good National School in our district where the girls are taught everything necessary for them to know in [the ranks of life in which God has placed them, why should I wish to take them away from the charities of home?" My dear friend, follow these girls home, hear the harsh word, see the hasty blow, ask where they sleep, and see the room in which father, mother, brothers, sisters, all lie down together, and wonder that any should be chaste, any should have decent habits or modest feelings. But you will say, "This only lasts till eleven or twelve years old, and then the girl goes out to service." And what is the result, if she does? She is put to work above her strength, and receives injuries which destroy her future health and comfort.—No, bad as homes are, and bad as is the education girls receive in them, but too often, they are better at home, till they have strength to do hard work, and then let them go and do it with the strength which God has given them. In the mean time, if they succeed in getting a light place, they will find "the gain a loss," almost invariably. The difference of expense between a servant, and a girl of twelve years old, consists in the wages, one receiving one shilling per week, the other, two. Now, it seems a hard thing to say, a person who cannot pay two shillings a week ought not to keep a servant; and, if you tell me, "The mistress does the hard work herself, and only employs the girl to do the lighter parts," such a place is the best school a girl can go to, and lucky is the girl who goes there; but, for one such mistress, there are fifty who expect the work of the servant to be done by the girl, *i. e.* one shilling to buy two shillings' worth of service. To save, at least, a few girls from such a fate—to raise them morally and intellectually, and to give them the blessing of a sound Church education, are my motives for establishing a school, of which I will give you every detail, in hopes of persuading you to follow my example. I will now only add, that you need not fear being ruined by the speculation. I will ensure the undertaking for 30*l.* per annum, at first starting; and afterwards, by God's blessing, it may become as mine has, nearly self-supporting.

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* *This lead ore.*

† Or, whatever the shape may be: native lead is found in globular masses.

‡ [This letter, a private one, which has been forwarded to us, touches on a subject so important, that we cannot help inserting it. We shall be glad to receive further communications from the same pen.]—ED.

I am yours, &c., M. C. R.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

Ques. 57.—*Proposed by Mr. O'Clazey, Durham.*

The slant height of a right cone is 60 feet, and the solid content 30063 cubic feet: required the perpendicular height.

Answered by Mr. Royds, Rochdale.

Let x = the height of the cone, then

$$\text{Diameter of the base} = 2\sqrt{60^2 - x^2},$$

Hence we have by the question, &c.,

$$(2\sqrt{60^2 - x^2})^2 \times \cdot 7854 \times \frac{x}{3} = 30063,$$

$$\therefore x^3 - 3600x = -28708;$$

Solving this cubic equation, we find

$$x = 55\cdot 524 \text{ or } 8\cdot 123,$$

which are the values of the two positive roots of the equation.

Ques. 58.—*Proposed by J. H.*

A cylindrical tin canister, 3 inches in diameter, and 6¾ inches in height, holds exactly a pound of ground coffee: required the specific gravity of the coffee.

Answered by Mr. G. Barnacle and Mr. Crampton.

$$\text{Volume coffee} = 3^2 \times \cdot 7854 \times 6\tfrac{3}{4} = 47\cdot 713 \text{ c. in.},$$

$$\text{Weight of 1 c. ft. coffee in oz.} = 16 \times \frac{1728}{47\cdot 713} = 579\cdot 4,$$

which is the specific gravity of the coffee, that of water being 1000.

Ques. 59.—*Proposed by Mr. Whitham, Wolverhampton.*

To find the values of x and y from the following equations:

$$\left\{\begin{array}{l} x^2 + x\sqrt[3]{xy^2} = a \ldots (1) \\ y^2 + y\sqrt[3]{x^2y} = b \ldots (2) \end{array}\right\}$$

Answered by Mr. O'Clazey, Durham.

By an easy reduction eqs. s. (1) and (2) become

$$x^{\frac{4}{3}}(x^{\frac{2}{3}} + y^{\frac{2}{3}}) = a \ldots (3)$$

$$y^{\frac{4}{3}}(y^{\frac{2}{3}} + x^{\frac{2}{3}}) = b \ldots (4),$$

Dividing (3) by (4) we obtain

$$\frac{x^{\frac{4}{3}}}{y^{\frac{4}{3}}} = \frac{a}{b}, \text{ and } \therefore x^2 = y^2 . \frac{a^{\frac{3}{2}}}{b^{\frac{3}{2}}}$$

Substituting this value of x^2 in eq. (1), we have

$$y^2 + y^2 . \frac{a^{\frac{1}{3}}}{b^{\frac{1}{3}}} = b$$

$$\therefore\ y = \left(\frac{b^{\frac{4}{3}}}{a^{\frac{1}{3}} + b^{\frac{1}{3}}} \right)^{\frac{1}{2}},$$

And from eq. (5)

$$x = \left(\frac{a^{\frac{4}{3}}}{a^{\frac{1}{3}} + b^{\frac{1}{3}}} \right)^{\frac{1}{2}},$$

LIST OF MATHEMATICAL ANSWERS.

F. R. Crampton. St. John's Wood, ans. 57, 58, 59; G. B. Bush, Yeovil, ans. 58; J. Royds, Rochdale, ans. 57, 58, 59; Kappa, Pembroke, ans. 58; J. O'Clazey, Shincliffe, Durham, ans. 57, 58, 59; J. W. Sebergham, ans. 57, 58, 59; J. E. Cross, Appleby, ans. 59; H. E. Poole, Anglesea, ans. 58; J. Sheppard, Gillingham, ans. 57, 58, 59; L. Saywell, ans. 58; W. Crow, Huddersfield, ans. 58; C. Elsee, Henley-on-Thames, ans. 57, 58, 59; B. Witham, ans. 57, 58, 59; G. Barnacle, Empingham, ans. 57, 58, 59; Petit Garçon, ans. 58; A. Allan, Fordmoss, Northumberland, ans. 57; Ambrose Mason, Durham, ans. 59; J. Webb, Ightham, ans. 57; W. Brown, Ightham, ans. 57; Nero, Berwick, ans. 58, 59; J. Herbert, ans. 59; J. Dungate, Ightham, ans. 57; J. Salter, Durham, ans. 57, 58, 59; F. W. B., Pembroke Dock, ans. 58, 59; T. Sothern, Burtonwood, ans. 57, 58; C. G. B. Wing, ans. 59; J. Moffit, Durham, ans. 57, 59; Alfred Honeysett, Sussex, ans. 59; Marcus, Dewsbury, ans. 58; J. B. B., Pembroke Dock, ans. 58; J. H. Barber, Harworth, ans. 58, 59; Emma Royds, Hollingworth, ans. 57, 58, 59; H. P. Newcastle, ans. 57, 58, 59.

NEW QUESTIONS,

TO BE ANSWERED IN OUR NUMBER FOR MAY, 1850.

QUES. 60.—*Proposed by Petit Garçon, Ecclesall National School, Sheffield.*

Two places, A and B, are 100 yards distant from each other, and two persons start from A in the direction C. When they have gone together a certain distance, D, one leaves the other at an angle of 120°, and goes direct to B; the other goes straight along to C (which is 80 yards from A), and then goes direct to B, making, with A C, an angle of 90°. How much has one walked farther than the other?

QUES. 61.—*Proposed by Mr. O'Clazey, Shincliffe, Durham.*

If the mean temperature of England be *c* times greater on Fahrenheit's scale than on the Centigrade, what is the temperature?

QUES. 62.—*Proposed by Loddes Dodsel, Esq., F.K.Z., A.Y.X., &c.*

If three of the four lines bisecting the interior angles of a quadrilateral meet in a point, the fourth bisector will pass through that point, and the sum of any two opposite sides will be equal to the semiperimeter of the quadrilateral.

SOME ACCOUNT OF THE LAWRENCE ASYLUM, KUSSOWLI:

BEING EXTRACTS FROM A LETTER ADDRESSED TO "THE FRIEND OF INDIA," BY AN EMINENT MISSIONARY.

THIS Institution, originally projected in 1846, owes its origin, as is generally known, to the zeal and energy of Sir Henry Lawrence; who, besides his strenuous personal advocacy of its philanthropic designs, set the example of munificent liberality towards it, by at once contributing a donation of Rs. 10,000, and an annual subscription of large amount ever since.

The designation of the Institution was assigned to it by Lord Hardinge, who, on his first visit to it, recorded, in the visitors' book, the following minute:—

"Lawrence Asylum, near Kussowli, 27th Oct. 1847.

"I desire on this occasion of visiting this admirable Institution, that henceforward, in all official communications, it shall be designated 'THE LAWRENCE ASYLUM;' to commemorate the benevolence of its founder and benefactor, Lieutenant-Colonel Lawrence, C. B., of the East India Company's Army; the Governor-General's Political Agent, and Resident at Lahore. (Signed) HARDINGE."

The object of the Asylum is thus briefly but explicitly set forth in the first of the fundamental rules, or code of laws, by which it will in future be governed:—

"That the object of this Institution is to provide for the orphan and other children of soldiers, serving or having served in India. First, for children of pure European parentage, (and, this demand being satisfied,) Secondly, for children of European fathers by Native or Eurasian mothers. An Asylum, where they may be rescued from the debilitating effects of the climate of the plains, and from the demoralizing influence of barrack-life; and where, in connection with the advantage of a bracing climate and healthy moral atmosphere, they may receive a plain, but useful, and, above all, religious education, adapted to their future prospects in life, and calculated, by the Divine blessing, to make them good Christians and intelligent and useful members of society."

The locality selected for the Institution was the previously unoccupied hill of Soniawur, behind, and about three miles south-east from the lofty and beautifully wooded range of Kussowli, which rises abruptly from the plains to the height of about 7500 feet. The road to Simla passes over the summits of Kussowli and descends, for several miles, towards Sabathu, along a series of edges and ravines—the latter station being only 4500 feet above the level of the sea. At a point about a mile and a half beyond the heights of Kussowli, a new road strikes off to the right, from the Simla line, and gradually ascends along the face of an almost perpendicular mountain-mass towards Soniawur, on the peaks of which the buildings of the Lawrence Asylum are conspicuously visible. Soniawur is thus an isolated hill, not much inferior in elevation to Kussowli—commanding the most magnificent prospect on all sides;—to the south-west, some of the buildings of the Kussowli Sanatarium, picturesquely situated around the brow of that Alpine eminence—to the south, a glimpse into the plains, through a ravine of apparently unfathomable depth—to the south-east, the new military Sanatarium of Dugshay, with its barrack-like edifices, and beyond it the enormously massive protuberance of the Chor mountain, 12,000 feet high—to the east and north-east, the dark shady heights of Simla, dotted with white-walled houses and cottages, and beyond, the real Himalya, the everlasting residences of frost and snow—to the north, greatly depressed among minor ridges and peaks, the variegated edifices of Sabathu, and beyond, the hills that bound the valley of the Sutlej, and these again backed by the snowy ranges of Kashmir and Thibet. Ten thousand thousand heights and depths—ridges and peaks—slopes and ravines—grassy, or woody, or precipitously rocky, as eternally clad in snowy mantles of dazzling whiteness;—all strewn around in vast and wild, and multitudinous profusion, like an unmeasurable ocean suddenly consolidated, when tossed and agitated by all the hurricanes of earth and heaven! Such is the locality chosen for the Lawrence Asylum—a locality which, in beauty and grandeur, probably surpasses that of any of the palaces of any or all the monarchs of the earth!

It was, as already stated, in 1846, at head-quarters, in camp, after the terrible battles of the Sutlej, that Colonel Lawrence's benevolent scheme first took shape and substantial form. Buildings were soon commenced. In April, 1847, the Institution was opened with fourteen children; Mrs. (Major) George Lawrence generously undertaking its management. In January, 1848, the superintendent, Mr. Parker,* arrived from England, bringing with him school-books, maps, and other educational apparatus. The pupils have now increased to upwards of a hundred—about one-half male, and the other female.

Already, the principal buildings consist of the following:—A stone-built bungalow for the superintendent, and another for the surgeon. A bungalow for the assistant-master, and another for the reception of parents or guardians visiting their children or wards. A large upper-roomed stone edifice—containing a spacious school-room, with large sleeping-rooms, bath-rooms, rooms for matron and pupil teachers—affording ample and comfortable accommodation for two hundred pupils. Another extensive stone edifice, with dining-room, printing-office, infant school-room, &c. A handsome arched entrance-gate, a steward's cottage, a visitor's room, a range of workshops, &c.

At present, the large school-room is used as a chapel, and the upper-roomed edifice is divided into two parts—one for boys and the other for girls. In order, however, to render the separation between these more complete, and add to the convenience and solemnity of public worship, a neat gothic chapel has begun to be erected to the west of the present building; while, beyond the site of the chapel, still farther to the west, the intention is to erect another edifice, corresponding to the one already raised on the east. The whole, when completed, will comfortably accommodate four hundred children—that is, two hundred boys in the one, and two hundred girls in the other. The money for erecting the chapel, &c., was lately obtained, seasonably but unexpectedly, in the form of a donation from "A Friend of the Orphan." It will not surprise those who know him to learn that this modest and anonymous "friend of the orphan," was the beneficent founder himself—Sir Henry Lawrence.

Previous to my visiting the Institution, sundry unfavourable hints and insinuations were, in sundry quarters, thrown out in my presence regarding it. I state this for the express purpose of declaring, that, on my inspection of the Institution itself, I was agreeably surprised to find them all without any real foundation.

Looking at the physical regime, I found the accommodation in every way ample and airy—all the apartments being thoroughly ventilated. The attached system of washing and bathing and wardrobe rooms, seemed at once convenient and complete. Every pupil was neatly and warmly clad, and each had a separate couch with abundance of clean bedding. The diet was varied from day to day, being ample in quantity and excellent in quality; the garden, formed at considerable expense and now worked chiefly by the pupils themselves, supplying fresh vegetables. Provision was made for regular daily exercise, either in the garden or play-ground, or in walks in the neighbourhood. And, as the result of all this, the hospital room was little required. The personal appearance of the pupils, both male and female, really astonished me—suddenly arriving, as I did, from among the languid forms and pale faces of the southern plains. I felt as if I had dropped from the clouds among groups of children on the breezy heathery slopes of the Grampians. They all looked so tidy and healthy—so hale and stout—so imbued with athletic energy; while their round and chubby cheeks seemed to vie in glowing blushes with the freshest roses of summer. Ah, thought I, how might the British mothers of Calcutta and elsewhere—encompassed though they be with all the elegancies of art and all the luxuries and comforts which ingenuity can contrive—how might they envy the sturdy, robust frames and rosy cheeks of those hill-reared orphans and children of the common British soldier!

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* Mr. Parker is a clergyman of the Church of England, and his friends will be glad to be reminded that he was, during some years, the active and efficient superintendent of St Peter's Sunday Schools, Mile End, Stepney.

The system of discipline I found to be rigid, yet mellowed by kindliness—all-pervasive—extending not merely to the school-room, but to the bedroom, the bathing-room, the play-ground—diffusing itself through every department of labour, recreation, and rest. This is accomplished by means of several gradations of youthful officers selected from the boys themselves—modelled somewhat after the military fashion—but all under the immediate guidance and direction of the superintendent; who, in addition to the forth-putting of his authority, as the controlling power, is in the habit of easily, naturally, and happily applying the sanctions of God's word to his varied instructions and decisions. This system, of what may be called "self-management," may be truly reported as having been attended with complete success. The pupils feel that they are under a kind but rigorous, constant, and vigilant oversight; the natural tendency to outbreaks of violence is repressed; the ordinary evil propensities are subjected to continual restraint; and habits of regularity and order, neatness and cleanliness, truth-telling and honesty, straight-forward frankness and mutual kindliness are gradually formed.

The subjects of study,—consisting of the common branches of reading, writing, arithmetic, history, geography—are, from the nature of the case, as yet somewhat elementary. But, in all of these, the pupils have made as much progress as could possibly have been expected within so short a period; more especially, when we consider the rawness and rudeness of the materials to be operated upon, and the many initial difficulties of every kind that had to be encountered and overcome. Rather, may I truly say, that, in this respect also, as in most others, what I witnessed rather exceeded than fell short of my anticipations. The great aim of the superintendent is to awaken the pupils into something like life, and have them thoroughly grounded in whatever they learn. Accordingly, they are no longer mere lumps of sluggish inertness, such as most of them once were; and such as their untrained and less-favoured fellows in the barrack-rooms still are. Their minds have been aroused from their natural state of indolence and stagnation; gleams of intelligence and right feeling have begun to sparkle in their eyes and animate their countenances; habits of attention and thoughtfulness have visibly begun to supersede the listlessness and ennui of dormant spirits: in short, a good and sure foundation has already been laid; and nothing but time and perseverance are wanting to rear upon it a noble superstructure.

Their religious duties and habits are also assiduously attended to. Every day is commenced and ended with devotional exercises—consisting of prayers, the singing of hymns, and the reading of selected portions of God's word. On the Lord's day, there are two full services of public worship. The Holy Scriptures are daily read—not as a matter of rote, but carefully, solemnly, as the oracles of the living God. In connection with such reading, as noted in a recent report, "the children have been taught the nature and attributes of God; their own state by nature, and the nature of the Christian's hope; salvation by faith in the Redeemer of the world. It has been attempted to impress the truths and doctrines of God's word not merely on their memories but on their hearts, and by simple and practical illustration, and affectionate appeals to the conscience, to make religion a personal thing, and to infuse its leaven into all the associations of youth. In more than a solitary case, God's great gift—the preparation of an attentive ear and a tender heart—has not been wanting to a right reception of this teaching; and it is hoped that the constant inculcation of right principles will, with the Divine blessing, work the most blessed and salutary effects on all." Now, from actual inspection and examination, it affords me the sincerest pleasure to testify to the unexaggerated correctness of this very gratifying statement. And I do so the more cheerfully, because I know that one of the fundamental rules has been so worded as to awaken serious doubts and apprehensions in many minds. It is there stated, "that in the religious lessons given in open school, such leading truths of Christianity as all receive shall be inculcated without allusion to disputed points of faith or practice." This, it must be owned, is rather vague and ambiguous; and it is to be hoped, that, in a revised edition, the vagueness and ambiguity will be removed.

Educational Varieties.

IMPORTANCE OF THE SOUND EDUCATION OF EACH VOTER.—In the Rev. Mr. May's Lecture on the Importance of Common Schools, delivered at Boston, before the *American Institute of Instruction*, the following singular incidents are mentioned:—

"Some of the most momentous measures of our State and National Governments have been decided by the votes of one or two individuals. In the decision of the Missouri question, two votes only enlarged the borders and rivetted the curse of slavery upon our country. And it is, I believe, susceptible of proof, that the war with England in 1812 would not have been waged but for one vote given in a passion by an obscure individual in Rhode Island. That vote affected the election of that one member of the United States Senate, to whose vote at an important crisis may be ascribed the subsequent decision of the Senate, to plunge our country into the horrors and vast expenditure of that useless conflict."—*Canadian Journal of Education.*

INTELLECTUAL LABOURERS.—"Zeno and Chrysippus," says Seneca, "did greater things in their studies, than if they had led armies, borne offices, or given laws, which indeed they did, not to one city alone, but to all mankind."

Intelligence.

Names of Masters and Students at the BATTERSEA TRAINING COLLEGE, *to whom the Committee of Council on Education have awarded Certificates of Merit at the Christmas Examination,* 1849.

FIRST CLASS.

Third Division.

Caston, William.

SECOND CLASS.

Second Division.

Dyer, Samuel.
Robinson, John Joshua.
Stollard, James.

Third Division.

Dixon, George.
Lewis, John.

THIRD CLASS.

First Division.

Hill, Henry.
Hind, William Lewis.
Salkeld, Thomas.

Second Division.

Percy, John.

Third Division.
Cheadle, Robert.
Crowden, George.
Davies, John Lane.
Hales, Thomas.
Parsons, Amos.
Startup, Orlando Ambrose.
Stevenson, David.
Winter, Thomas.

PROGRESS OF CHURCH EDUCATION IN SOUTH AUSTRALIA.—Since my letter, dated July 30th, it has been found advisable to take another step with reference to the Collegiate School. The increasing number of the scholars has made it evident, that the school-room attached to Trinity Church is insufficient for their accommodation. The absence also of a play-ground, and its proximity to a part of the town not the most eligible for the moral tone of young boys, determined the governors to commence at once the building of a school-room of suitable height and dimensions on the college grounds. Five hundred pounds was voted for the purpose, and the building is to be completed by the middle of January next, when the school reassembles after the summer holidays. The school-room, though now detached, will eventually form part of the quadrangle of the school-buildings. Its dimensions are sixty by thirty feet. The walls twenty feet high, with a roof of high pitch. On Wednesday, the 10th, arrangements were made for laying the first stone, which was done in the presence of a large party of friends by the late and present captain of the school; who also had won successively the annual prize, which, as president and visitor of the school, I give for general attainments and good conduct. An elegant collation was provided by a liberal friend of the institution; and it was really an animating scene to see so large an assemblage of the upper classes gathered together in the cause of education, *on a spot where, twelve years ago, kangaroos fed undisturbed.* In order to meet the weekly payments of this new contract, which is for the general benefit of the scholars, I purpose to draw a bill on the Society for a moiety of the remaining balance on account of the Collegiate School vote. There will still remain 500*l.* to be drawn some time hence, as the works of the Collegiate School progress. The walls of the portion contracted for are just out of the ground. The school-room is being vigorously pushed forward. A library has been commenced for the use of the boys; and the books ordered have arrived safely from Mr. Darling's, of Little Queen Street, not far from your depository. Two ladies kindly contributed each a present of books, to increase the store; and I hope, when a proper room is provided in the new buildings, to obtain the works printed at the university presses. Proper prize-books for classical and commercial schools are scarce and dear. I have been a second time to Port Lincoln since I wrote last, and during my late visit, on Wednesday, the 17th, the Lieutenant-Governor, Sir H. Young, laid the foundation of the church of St. Thomas. Though small and humble, and in proportion to the means and numbers of the inhabitants, yet I trust it will be instrumental to the good of this little township, with its beautiful bay and harbour. On the same day I had the satisfaction of joining in marriage a native couple, who had been brought up in the school at Adelaide. The Governor and Lady Young were present, with most of the inhabitants, and the Protector of Aborigines, Mr. Moorhouse. The young people behaved with great propriety, and as they are removed from the evil influences of their own (Adelaide) tribe, I trust the solemnity of the ceremony may tend to strengthen the obligation of the marriage tie, which is very lightly regarded by the wild natives. They were to be domestic servants to one of the most intelligent and respectable settlers, at a station forty miles west of Port Lincoln. I expect, in a few days, to lay the first stone of a new church at Hindmarsh, where a warm desire for the ordinances of our Church has been created by the ministration of the Rev. R. S. P. Allom, second-master of the Collegiate

School. Mr. John Morphett, member of the Legislative Council (who is conjoined with myself in the investment of the funds of the See by the Colonial Bishoprics Committee), has not yet recommended any purchase, in lieu of the portion of the collegiate estate, which has been given up, and for which 540*l.* was paid over by the Committee to the venerable Society. The two acres at North Adelaide have been paid for from another source. Should an eligible investment present itself, we propose to draw a bill conjointly (as in the case of the other funds placed at our disposal by the Colonial Bishoprics Committee), for the above amount. Until the terminus of the Port railroad is settled, whether at the present port, or a spot lower down the river, it will not be advisable to begin a new church. It is thought the principal business will eventually be done at the north arm of the creek, two miles from the present wharves and custom-house. The last quarter brought us above 3500 immigrants. The population is now above 50,000, and "yet there is room," except, alas! in our churches and schools. It is a subject of anxious thought.—*Extract of a Letter from the Lord Bishop of Adelaide to the Society for Promoting Christian Knowledge. Dated, Oct.* 29, 1849.

UNIVERSITY HALL, GORDON SQUARE.—It is not only the working man who is to reap the benefits of the progress of combination and association, but the very numerous classes of bachelors in all grades of society. There can be no reason why, for example, the banker's, the merchant's, the brewer's, the auctioneer's, and an immense number of other clerks, should not have the opportunity of the same comfort, economy, and safety which the Model Lodging-Houses for the labouring classes extend to their occupiers. The young artist, author, surgeon, lawyer, and, in fine, all those members of society who look forward to the day when they shall belong to a club, might at once have all, and more than the advantages of those institutions. This is a theme on which much more might be said than our present space will allow, but it must be continually urged; and perhaps no more favourable proof of its practicability can be given than the recent establishment of University Hall. This edifice forms the centre of the west side of Gordon Square, in the rear of University College; and is intended for the reception of young men who are studying in different professions, as law, medicine, the *belles lettres*, &c. With Halls, in the old days of the old Universities, as with Inns in the old days of Law, every one was familiar. Our most ancient English College, claiming Alfred for its founder, still calls itself "the Great Hall of the University." And in various such buildings, great or small, the various and numerous students of the old times ate and lived together; with the aid of the superintending Master of Arts, perfecting themselves in the grammar, and logic, and rhetoric which they studied under University professors. But such things are obsolete. Long ago, at Oxford and Cambridge, the colleges and college tutors have subjugated the halls and professors—have silenced the latter, and exterminated the former. Only some few voices of titular professors are still heard in small exceptional conventicles; and only a few institutions—colleges all but in name—still retain the style and title of Halls. Meantime, in the new London University, the Professor has recovered something of his old vitality. Gower Street and the Strand, in this respect, take up the tale of Isis and the Cam. And here, too, it seems, in despite of that modern and ephemeral phenomenon of "Apartments to let," we now find, in somewhat of mediæval costume, reviving, or wishing to revive, the veritable mediæval Hall. The building presents an imposing *façade* to form the west centre of Gordon Square. It is already tenanted, we are informed, by a principal and vice-principal, and a moderate number of students of University College. To University College, through its Gothic back-door (for there is, in the rear, a private communication), students, as in old days, issue book in hand to professorial classes. Instruction there received they have opportunity of reconsidering and digesting, under the care of superintending seniors, here. And in its well-proportioned and capacious hall they breakfast and dine, as did the young men of old. The institution in question certainly shows the way for supplying an obvious deficiency in the new University, and for securing it many advantages without many evils—some of the attractions, free from some of the mischiefs—of the College system of Oxford and Cambridge. It is not, however, simply as a student's club-house, or model lodging-house, that University Hall has been erected. It is to be, we are told, subsidiary to University College in more ways than one. To instruction in theology and moral philosophy (which are excluded by the rules of the older institution), a local habitation will be offered in the new. With the superintendence and assistance of its council, its lecture-rooms will be available for these purposes. The edifice, beyond its internal claims of expanse, decoration, and apt arrangement of rooms, demands attention to its exterior, which is of the latest period of our Collegiate Gothic architecture, such as may be seen at Hampton Court; and is a very happy adaptation of the leading features of the style to one of the greatest puzzles in the architecture of our day—namely, the grouping of uniform windows in numerous stories. Another good feature is, that all the furniture of the establishment is uniform and synonymous with the design. The cost of the works, designed by Professor Donaldson, and executed by Mr. John Jay, did not exceed 10,000*l.* exclusive of the two houses intended to appear as wings, one of which is intended for the dwelling of the Principal. Mention must be made, too, of the Duke of Bedford, who, with unexampled generosity, has, to promote the purposes of liberal education, granted permission to the founders to purchase, within a given period, the fee-simple of the property, that the building may always remain appropriated to its present intentions. —*Illustrated London News.*

The Episcopal Committee on Education of the Episcopal Church of Scotland, have just taken Croft-an-righ House, Edinburgh, for the new Normal School, about to be commenced for that increasing body. It is understood, that two tutors are to be appointed, resident in the establishment, and that it will open with not less than twelve pupils in May next. Croft-an-righ House is close to Holyrood Palace, a locality full of national associations.

To Correspondents.

A Subscriber had better apply to the College directly.

A Constant Reader is informed, that it is our intention to insert a paper on the subject he wrote about in an early number;—there is no book to which we can refer him.

The Paper on Belgium and its Schools, and the Notices of Books, are deferred until our next, in consequence of a press of matter.

METHOD, AND THE PRINCIPLES OF TEACHING:

BEING THE SUBSTANCE OF A LETTER ADDRESSED TO A CLERGYMAN IN INDIA, IN CHARGE OF SOME IMPORTANT EDUCATIONAL ESTABLISHMENTS.

(*Continued from page* 116.)

THE doctrine which I have just laid down leads us *so to treat every subject, as that the simple and easy may precede the difficult and complex matter of instruction.* This principle of teaching is so obvious, as to need no illustration.

Learn to separate that which is LESS *from that which is* MORE *important in education. Distinguish carefully between those subjects of instruction which are indispensable and those that are only desirable.* You must not imagine that every branch of study which enters into the course of an elementary school is equally necessary. An adequate acquaintance, for example, with Divine truth is far more valuable to a child than familiarity with the figures of geometry and the curves of linear drawing. The doctrines revealed in the Holy Bible require deeper study and a far more extended development than any other subjects, and therefore ought to receive a larger share of the time and attention of children at school. It is, unhappily, the tendency of many modern schemes for the improvement of elementary education to lessen, practically speaking, its religious character. Dogmatic teaching is almost entirely omitted. The master of the school is required to give information about so many secular things, that he is in great danger of forgetting "the one thing needful;" without which, all the science of the world is but splendid folly.

Nor is it uncommon to observe, in primary schools, that the scholars are perfectly conversant with some minor accessories of instruction, while they are only very superficially acquainted with the great principles which lie at the basis of all knowledge. This evil is too often the result of the ignorance of their parents. Some thoughtless parents judge of the progress of their children, and the efficiency of a school, by the copybooks which are brought home at the end of a quarter. If these show a series of artful flourishes, if they are enriched by designs in penmanship and calligraphy, then it is supposed that the child is making real progress in learning, and acquiring habits of mental discipline. The reverse is too frequently the case. Accustomed to receive applause for that which is not valuable, the child's apprehension of the objects on which his industry ought to be exercised becomes partial and confused. He wastes his precious time in occupations which will leave no permanent impression for good on his mind; which, in fact, have rather made him worse than he was, because they have implanted a love of laborious trifling.

Be careful to employ methods of instruction which appear best adapted to this or that subject of study. You must not imagine that the processes are the same in all cases. History requires a different mode of treatment from that which you would apply in teaching pure mathematics. A lesson on some doctrine of Holy Scripture must not be given in the same way as you would impart the knowledge of musical scales. These observations will appear to you trite and commonplace. I regret to state that they are, nevertheless, necessary.

In considering the principles of teaching, as they are modified by the exterior circumstances of any school, we must not forget the class of children for whose education it has been instituted, the numbers that frequent it, the length of time they continue under instruction, and the position and occupations of their parents. The amount and variety of lessons to be given will be necessarily determined by the duration of the attendance of the scholars. The same consideration will modify the time-table. It will include fewer subjects of instruction, and these of the most necessary to be known. I say *the most necessary*, viewed in relation to their future career, as suggested by the present condition and prospects of their parents. Nor must the circumstances of the locality in which they reside be forgotten in forming the estimate of this necessity. A knowledge of mensuration in an agricultural district, of mechanics in a manufacturing district, and of gases in a mining district, is of greater necessity in proportion to its bearing upon the safety, the comfort, or the social progress of the young scholar in after life. And yet we sometimes see a farmer's son proficient in "units of work," while he does not know a rood from an acre; and a mechanic's son learning a smattering of French, while he is unable to explain the simplest part of the vast steam-engine which he will be expected one day to govern.

It will be said that these remarks favour *class education*, as it is called; that they deny to a man any career beyond the station in which he was born; that they are the spurious offspring of a *doctrinaire* philosophy, invented by a jealous aristocracy; that they are designed to constitute what a French writer cleverly calls a *workman* (*ouvrier*) in opposition to a *man* (*homme*).

I cannot acknowledge the justice, though I freely admit the plausibility, of this objection. For I cannot find any hint in the Holy Bible, in the constitution of our present society, or in the records of past history, which promises a career to any man independent of labour; and, for four-fifths of men, that labour must be *physical* rather than *mental*. Literallv, in the sweat of their brow they must eat bread. And, for the most part, exactly as their forefathers toiled, so must they. The tiller of the ground will leave his occupation, and the legacy of his experience and skill in that occupation, to his descendants. The mechanic brings up his son to his own handicraft. Certain conditions of the soil, and such like things, favour certain modes of obtaining a livelihood, and these go down from parent to child. The brilliant exceptions to these laws of Divine Providence, in the moral government of the world, must not be permitted to disturb the arrangements which a wise and discriminating system of education would make in harmony with these provisions. The seafaring boys must be taught navigation; the silk-weaving boys must receive some notions in the art of design; the manufacturing boys must not be defrauded of their right of instruction in the elements of mechanical science; the farmers' boys may experiment on the properties of soils;—all being taught—as far as human instrumentality can teach that great science—the fear of God, which is the beginning of wisdom, and such elements of language as they can properly be made acquainted with, for the enlargement of their minds, and the formation of proper habits of reflection and moral inquiry.

These remarks may serve to check the tendency which an ambitious teacher manifests to subject his scholars to a system of instruction which represents rather his own preferences than their wants. His self-love leads him to try and make his scholars little, mutilated fragments of himself. He dwells on the branches of knowledge which he knows, or rather on those which his vanity prefers, and not on those which are best adapted to them. Is he, for instance, a good musician? Then a disproportionate share of school-time is devoted to the practice of choral singing. Strangers, unacquainted with the truth of the case, come to visit the school and are delighted. Meanwhile, the little boys cannot read, the middle classes cannot spell, and the elder boys, just completing their course, are ignorant, it may be, of the first laws of geographical science, or the leading facts in the history of their own country. A skilful inspector, on visiting such a school, instantly discovers its transparent defects; ignores, probably, the singing altogether, and makes an unfavourable report.

(*To be continued.*)

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL.

[This diary was not written for publication: it contains, however, told in a quaint way, much that is interesting and instructive.]

No. 4.

Ways and Means.

The Irishman too frequently does not improve in his condition, either as a man or a citizen, although you increase his income. If he is employed at railway work, and receives good wages, he still continues to live in a hovel; and it is not a little remarkable that the same is said of him in America, where his shanty remains much longer without being hid by the red brick, or frame house, than that of the other settlers. Indeed he can scarcely be called a *settler*, in one sense, so much is he given to wander from one location to another. Few of them can withstand the temptations offered by a "lumbering party." They do not thrive when left to themselves, unless they are impelled to exertion by stern necessity, and they are ever more ready to follow than to lead. The Highlanders in Canada have a like disposition, and it is well known that Sir Allan M'Nab's people most prefer hunting, or fishing, or "lumbering," that is, cutting timber in the woods, and floating it in a large raft to market, to steady agricultural labour. The Celts are constitutionally *nomadic;* they are better adapted for shepherds than for agriculturists, and this ought to be considered by their patrons, for they cannot do without patrons, when they select for them a new home. Many Celtic families just exist in America, that would flourish readily at the Cape or in Australia . . . .
I know several Irishmen who would rather go about the streets selling oranges or things of that description, than work as bricklayer's labourers or in the sewers, by which three or four shillings a day might be earned. The profit which they realise from this traffic seldom exceeds fourpence a day, and sometimes it is less. In order to clear eightpence, they must sell 100 oranges, and few of them can dispose of more than 300 a week. . . . . . The regular costermonger is a trade of higher standing than the Irish dealer in fruit, and he generally manages to live by his trade. But the stout healthy men who may have been seen in great numbers for months past in the suburbs of London, with baskets of oranges on their heads, are not regular traders. It is not to be supposed, however, that the Irishman lives on the profits of his orange-basket—many a quiet area yields morsels that his whole stock could not buy, and his wife is most probably earning food for the family by her labour as a charwoman, or as a washerwoman, or in the market-gardens, if she lodges in the outskirts of the town. The women are far more industrious than the men, and an Irishman marries without the least care as to a provision for his wife; she is expected to manage that for herself. Proof enough this of the rank which they both hold in the scale of civilization. . . . . . Crossing-sweeping is much more profitable than trading; but it requires a person of a somewhat interesting appearance to succeed in this line. I had a very pretty little pupil who took to that calling, and her income for a month averaged 4½d. each week day, and 11d. each Sunday. A lady took it into her head that these poor sweeps were a despised and neglected race,

and that it was her duty to befriend them. One, two, three professional sweeps were soon on our books, and they were each ushered into the school by special letters recommendatory. But their stay was of very short duration, as one of them was a lad of business habits. He said to me, "Sir, I wants some grub." I told him that I had none to give him. "Thin, I goes," he answered, "for this spellin aint so good for my stomik as the sweepin; but I tell yer what, if they hallows me five bob a week I'll stop." I still receive visits from this boy, when the weather renders it disagreeable for him to be out. On one occasion I said—why did you leave the crossing to-day, Dick? "Coz it rains like blazes," he answered. "That's the time the roads require sweeping," said I. "Oh is it?" he rejoined; "but it aint the time as them as pays is out." . . . .

The trader who deals with these Irish people, ought to be a man of patient disposition, as his customers have an awkward manner of taking the law into their own hands, when they feel themselves aggrieved. A poor fellow has been here selling fish, which were found by some of the purchasers to be of bad quality; so they leagued together, and pelted him with the rotten fish which he had vended. Of course, a great crowd of people were soon on the spot to enjoy the fun; and they managed amongst them to upset the little cart, which contained the rest of the stock. The poor costermonger looked the picture of despair, but an appeal to the law would have been useless, as it was only an Irish frolic. . . . .

On Sunday, St. Patrick's-day, they had a regular pitched battle, as the settlement of an old quarrel; one of the combatants travelled seventy-five miles, to take his share in the proceedings. . . . . . .

"How do they live—how *do* they live?" This question is often put to me, and I generally answer, that the most of them live by false pretences, whereby they obtain much money from people who suppose themselves to be charitable. I cannot make those who labour under this delusion believe, that money distributed in the streets, or given to applicants who write begging letters, is money that had been far better employed were it thrown into the Thames; for, if it were ever recovered from thence, it would be by some little trouble and exertion which would look like *work* to the finders, and might have a salutary effect in that way. But a shilling thrown to a man, as one would throw a bone to a dog, is not heaven-born charity, and it injures both the giver and the receiver. It is hard to find words strong enough to denounce the folly which breeds and fosters a class of tramps and vagabonds. I was this morning in a lodging-house frequented by these people, and I had a conversation with a man who has made himself known to several Noble Lords, and others, and who lives very well on his acquaintances. I need not lumber my papers with what passed, except to record my own conviction that he would not exchange his "position" with any working-man. He told me that he would rather be *transported* than go to a workhouse, and that he would not go back to poor miserable starving Ireland, for any consideration whatever. He is evidently a person of education, although he denies that; and his hands are not those of a working-man. The woman he travels with and calls his wife, has all the characteristics of a peasant; and when they are together, notwithstanding they are both meanly dressed, the man appears to be of a very different station. Men of this stamp can only be made to live honestly by force, but not by other means. . . . . .

The articles sold by women hawkers are much more profitable than those sold by men; sweetmeats realize a handsome profit, and boiled sheeps' feet bought wholesale in Bermondsey yield freely cent. per cent. in almost any low neighbourhood of the metropolis. The latter article is in most demand on Saturday nights, and serves as a delectable condiment to those merry Irish boys, who are in the habit of toasting their "sweethearts and wives" over the last social cup of the week.

Hawkers of tinware make also a good trade of it; but of all the traffic with which I am conversant, sellers of lace, and baubles in the shape of jewellery, derive the greatest benefit, as their trade tells two ways, and is conducted on those principles of reciprocity which obtain so much in new countries. With them, questions on the currency are never agitated; because, like the inhabitants of Utopia and El Dorado, they believe that they possess a true standard of value, and yet it is one which is not fixed by law. It is altogether regulated by the state of the pawnbroker's temper. . . . . The trade-basket being supplied with sundry lace collars and cuffs, and a few sham gold rings, &c., the lace-seller dresses herself as quietly and as decently as possible, and goes forth to her labours. She soon gains admission to the kitchen of some mansion, and displays her wares, and perhaps she gets breakfast the while, and has a gossip. Business follows; the cook's fur ruff, now that the winter is over, is exchanged for a smart collar; and the lady's maid transfers her legitimate perquisite, her young mistress's spencer, for a huge pair of lace cuffs to fill up the gap which requires to be filled in the fashionable sleeve of her new gown. . . . . The trader makes half-a-dozen or more calls in the course of the morning, and usually returns home soon after noon. The articles which she has received in barter are then carefully arranged: this must go to so and so, and that to * * * *; this may *go in* by day-light, but that will take better at night. The articles are then pawned, and their standard value determined. Under certain circumstances, this might be considered a legitimate business, but I do not know one who is engaged in it who is not in addition thereto a regular beggar, for which the basket is used as a cloak; and it has other advantages besides—being thus by traffic made acquainted with the servants, the ladies are more easily got at. . . . . These traders make very good incomes; many of them are married women, and what with their husbands' wages, their bartering and their begging, and their catering abilities generally—which like all other talents are improved by use—they contrive to live a wild, easy, and I may say, to them, a pleasant life. One of these women, young, healthy, and good-looking, who was about to be confined of her second child, applied to me for assistance, and in ignorance of her true character I readily granted her request. As I became better acquainted with her circumstances, I was led to discontinue this allowance; for I satisfied myself that her income was quite equal to my own, and to that of many who contributed to the funds which were at my disposal.

This woman has been a beggar from girlhood; a bricklayer married her knowing her to be a beggar; his own mother takes freely what she can get at all times and seasons, although her husband and two unmarried sons are on the whole well employed. And what is worthy of most notice, they do not suffer in the estimation of their neighbours on this account, for when the baby was baptized,—in expectation of whose appearance I was expected to make some provision,—the male friends of the family drank forty gallons of ale, and the females a quantity of gin of nearly equal price. . . . . The liquor, as is customary, was paid for by the guests. . . . . . . I am not discussing the morality of the usage, nor do I wish to notice it even as the abuse of what may be a friendly custom. I merely state the fact, that at the "christening" of a beggar's baby, the male guests drank forty gallons of ale and the women a large quantity of gin. . . . .

Incidents are constantly occurring which lead me to notice, that when women are employed at different occupations from their husbands, and when they can earn as much or more money than they, they do not make better wives in consequence. . . . . It is customary with not a few of them to dress sprucely in the evening, and to spend their profits at the canteens and other such places. . . . . . . Money given away without thought or caution should not be dignified by the givers as charity; let them call it what they like but charity, for that is not a proper word to use; and it only deceives the donors, more especially so in a country which makes provision for the destitute by law. The money squandered in this heedless way supports numbers of unworthy characters, and it is time that some steps were taken to destroy the system. Those who have fallen so low that they cannot recover by a little timely aid, ought to apply to the workhouse officials in the usual manner; and if they refuse to do so, in nine cases out of ten, they will turn out to be professional beggars—a race the most detestable of any that I know, and from which springs the whole tribe of thieves, pickpockets, and swindlers. . . . . The clergy of the Church of Rome appear to understand this question better than those of the Church; and although they do not say much about it openly, they act on an uniform plan, and they invariably place the poor, when they can do so, at the mercy of the law. It is no secret that those who are connected with the chapel in Moorfields have no money at their disposal for charitable purposes, except that which they receive as Easter offerings—about eighty pounds a year; nor is this sum expended in casual, or hand-to-mouth assistance to their poor; for such a sum would not admit of their giving more than a penny to each poor person who called on them for assistance in the course of a year. The consequence is, that the Romish priests do not administer relief as bountiful churchmen do; they expend the eighty pounds in subscribing to the hospitals, and by donations to other public charitable institutions; and they leave the poor, as I have said somewhere before, to the law and the streets. . . Two months ago a family quarrel led to the father of two of my boys being sent to prison. . . . . Before his term of imprisonment expired, his wife ran away and left the boys on my hands. April 15th. A fine-looking, soldierly man, came into the school to-day, and bowing first to my assistant and then to me, he expressed himself as being at a loss to decide which was Mr. ——. I at once answered for myself, when he again saluted me with a very grand, half-military, half-oriental obeisance. "Sir," he said, "I have called to thank you for your attention to my boys; I respect your calling, sir, I respect men of your kind. Do not think that I am a bad man, because I am just out of prison. No, sir, I am not a bad man, I am only an injured one; but none of that, sir, none of that. When I heard of how you behaved to my boys, sir, I thought of that great poet and schoolmaster, Homer—Homer, sir, you have heard or read of Homer?" I bowed assent. "Yes, sir, I thought of Homer, and the happy years I spent in Greece. I wandered many a time over the ruins of Homer's school, and as I have looked on the empty alcoves where the books and scripts used to be kept—alcoves hewn out of the rock—often have I looked to heaven in wonder (I could do so, for the roof and upper walls had perished ages before)—I wondered, sir, that his name and works should have survived so long—so long; and then I used to think of the *good*, the *mysteries* that must be in books. It all came into my head again when I heard what you—a schoolmaster—did for my boys. . . I have been in the cave of Ulysses, too, and I know all about the wines of Greece. . . . If you go to Greece, sir, never be one of three to sit down to a thirty-six pint measure of that pale, thin wine of Scio, that you can drink so much of, and that makes one feel so cold; for you must have a graybeard of brandy, or two, afterwards, to take the chill off, and then when you get to the air—oh! I did not get the better of that for a fortnight. . . . . But I have done some *good* service in my time. When Don Pedro and Don Miguel had the skirmish in Portugal, I fought, sir, for the true religion, and for the crown, and for upholding the power of the priests, and the property of the church.—Sir, I was one of the Queen of Portugal's body-guard." . . . . .

This court of ours might be figuratively described as a little bay on the shore of existence, which is supplied with eddying water from the great stream of society, as it rolls along to do the world's work. Into it, and every such by-corner, persons of all grades, who are found useless or unworthy, are thrown—just like weeds drifted aside by the noble river, to wheel in meaningless gyrations around some neglected pool; whilst the main stream glides steadily forward on its more important mission. And at those seasons when popular discontent swells the flood, the ordinary land-marks and indentations being carried away, strange creatures—the denizens of the pools—appear on the shallows of Kennington Common, whose haggard mien and reckless bearing convey tidings of misery and alarm to the nation that knows so little of the materials of which the under current of its society is composed. To meet a gigantic evil of this kind by the establishment of a few ill-managed, sickly evening schools, is an expedient unworthy of this age and country. It looks like dropping turpentine from a vial on a blazing bonfire, with a view to put it out. . . . .

When an Irish proprietor lets his "castle," and comes "over," he is sometimes followed by many of his dependants, who expect him to provide "places" for them. Here is a family waiting for the "master," who has not yet arrived in town, and they are totally destitute. When I spoke of the workhouse, they shrunk from me, as they saw that to take relief from thence was to take a step towards "home." Major —— assures me that pilgrims of this description are by no means rare, and he gave me some facts on the subject. What is to be done with these people?

IDEAS ON PHYSICAL GEOGRAPHY.

(*Continued from page* 130.)

CHAPTER XXVII.

442. Upon the frontier line of two empires different people have frequent communication, the result of which would be fusion of nationality; if mountains, rivers, ideas and opinions diffused by chiefs, commercial regulations, and the natural inclination of mankind to rivalry, did not serve to keep alive a national spirit.

443. Thus, custom-houses are not only a fiscal, but also a political, institution.

445. England is in a position highly favourable to the concentration of national life.

The English cannot acquire other languages with facility: they consequently imbibe very few ideas, even from the foreigners who visit them.

In fact, when new ideas, as those of the Quakers for example, begin to ferment in the island, the government encourages them to seek some distant country.

On the other hand, the English idiom is universally diffused; the soldiers, merchants, and aristocracy of England, convey it into every quarter of the globe.

Thus, during the reign of Napoleon, and even for a long time after, the uninitiated English had incomplete ideas of continental events.

446. Who, alas, could believe that falsehood is sometimes the solemn work of a government, of a nation, even of the whole human race; who are perfidious to their children, to their posterity, and, above all, to those who are the most warmly attached to them?

This is a fact.

447. A caste, or class of society, often communicates to others, and imbibes itself, or altogether repels, doctrines which are opposed or favourable to the increase of population, and to its welfare in a certain locality.

448. Can we deduce, from the knowledge of spots, the localities and the circumstances under which rival people, or hostile castes, will communicate to others, and imbibe themselves, doctrines opposed to population?

449. We may deduce them from the consideration of spots, and from the age of the people.

450. In every reunion of men there are two great doctrines, allied to the energy, the character, and the density of the population—the naked truth and profitable illusions, pessimism and optimism.

Energetic workers and pessimism coalesce.

The affluent and the poor, the timorous and those devoid of energy, unite themselves to optimism.

451. Religious and moral doctrines have an influence upon the development of the population.

452. Thus, it is said that life has more activity, and is more productive, among the Protestants than among the Roman Catholics.

453. But, let us not forget, different forms of worship are too often mere professions, serving only as a mask to conceal the real principles which influence a man's daily life.

CHAPTER XXVIII.

455. The character and manners of a people depend, in great part, on the geographical peculiarities of the country; but also upon the ideas which have been bequeathed to them by destroyed nations, as well as those ideas which they receive from neighbouring people.

Thus, the French of the present day are influenced in their conduct by the influences of climate; by the ideas, usages, and laws of the Greeks and Romans; by ideas which they imbibe from England, America, Germany, Poland, Prussia, &c.

456. On the border of fertilizing and navigable waters spring up riches: riches give birth to bodily repose, to mental liberty; to ideas for the preservation, the consumption, and the reproduction of property; questions of partition, robbery of all kinds; and, consequently, restraint and repression.

457. The rich (and many are possessed of something) maintain doctrines of order and of wisdom.

458. Geometrical measures and calculation are the offspring of want.

Man clings, in fertile spots, to material property: he who acquires the most, is the man who is most dexterous or most laborious; he it is who possesses the most power. The aristocracy spring from thence.

Hence, superabundance, accumulation of goods and storehouses, prisons, laws, and judges are necessary. Nor do these suffice: the people must be convinced of the necessity of probity; the children must be prepared to live in the midst of all this property without meddling with it. Their minds must be diverted from the sensual pleasures which all this property procures. They must be taught that abundance is not the sole source of happiness; the pleasures of imagination must be invented.

459. Moreover, this aggregation of productions, this complication of labour, the low habitation, the impure air, want, and mendicity under many forms, weaken the vital energy of the poor; the experience, ever fatal, of revolt, crushes them; they become submissive and humiliated.

Many principles and facts originate from the thirst for justice and riches which torments man, in spots where superfluity of property is dominant.

460. Thence also spring up many voluptuous talents — music, painting, sculpture. In short, these fertile spots are the centres of what is called civilization.

461. The dweller on the mountains finds pleasures with facility in the aspect of nature, in the purity of the abundant and exhilarating air; a few inspirations of this air, a few pulsations of the heart, produced by a cool and animated blood, a few glances of the distant plain and of the lovely neighbouring retreats, procure for him as much pleasure as the sight of a heap of stuffs affords to the man of the plain.

The mountaineer is conscious of high emotions; of a delicious vigour which pervades every muscle, and every vein and artery. He is proud and fearless.

These principles ought to be applied to all animated beings.

So true are they, that a lofty hill of little extent, in the midst of extensive plains, contains inhabitants who are much dreaded by those of the lowlands.

462. The energetic mountaineer loves the rough unfettered life.

We must not believe that the same injury produces the same suffering in the mountaineer and in the man of the plain.

The same stroke produces, according to the state in which the man may be, pleasure or pain.

This law has a much greater extent than we imagine, and explains many facts deemed incomprehensible.

463. The geographical and historical characters of the habitation of a man, his bodily form, his movements, his ideas and passions, depend one upon the other, and are closely connected by laws little known as yet to the many, but certain and evident to observing men.

Many unenlightened persons will deny this principle, and will even oppose it with irritation. Let such persons pardon the author, if sometimes he is at fault.

This would be the place to give the promised data; but will not he who first reveals them have to fear lest he should create, in unenlightened persons, prejudices and resentments?

Everything is dangerous in the hands of people devoid of intelligence.

464. The foreign substances which are always found in potable water have much influence on the configuration of man and of animals, and upon their character.

It is well known that lime, taken inwardly, affects man's visage and temperament.

465. The heat of the sun, the aridity of the soil, the scarcity, the bad quality of alimentary water, the dryness of the air, produce the black colour in the skin of man. We have in Europe some indicatory examples.

466. The sexual passion is the dominant occupation of the people of the south and of the affluent. It is one of the reasons wherefore a capital extends its power more easily to the south than to the north.

467. The man who concedes nothing to the passions is always, and in everything, the most severe combatant. This law explains many facts: it explains much of the success attributed to good fortune, and to chance.

468. There are populations necessarily subject to strangers, because licentiousness of manners prevents, in their case, the institution of a national government.

469. In climates where the sexual passions are weak, marriage has a more mercantile character, is more legal, more calculated than elsewhere.

470. Thus, marriage is closely connected to the passions by climate, and to the repartition of property by heritage.

471. Proprietaries, hereditary possessions, marriage, manners permissive of monogamy or polygamy, climate, geographical characteristics, laws, government—all these things partly depend one upon the other.

472. In climates and in spots where the sexual passions are ardent, the woman does no labour, the man but little.

473. Hence brigandage or war.

474. It is well known, that in the southern climates the sexual passions are more precocious than in the northern. The women are married at nine, ten, fifteen years of age, according to the climate.

Old age too, in warm climates, approaches with more rapid strides. Beauty fades there rapidly. Their lot then is less happy than the lot of those towards the north.

CHAPTER XXIX.

475. Men of the north subdue the south by force; but men of the south introduce themselves into the government by tact.

Men of the north prevail in the hour of violence: men of the south regain in the period of calm all that they lost by violence; and this is constantly recurring, as the melted snow ever descends from the mountain-top.

The people of the north, in a savage state, may be momentarily mastered by a civilized people from the south; but there must be a wide difference of civilization between the two.

Thus, the French ought not to be occupiers in Canada in face of the English and the Germans.

The English, the Germans, and the Russians govern in the north of America.

The Spaniards have governed in the Netherlands, but Spaniards mingled with Germans. But the Spaniards are mountaineers; and, after all, what a contest they have had to sustain, and how has it terminated! and what a petty people they have, in vain, wished to subdue!

Two events have greatly favoured Russia: royalty has descended to the south, and the capital has mounted to the north.

476. Northmen, or mountaineers, employ great and energetic means, often maintain disputes with the noblesse, are cognizant of meanness and nobility of soul. Men of the south and of the plains calculate only.

477. It is from the south that political skill emanates.

478. Kings, coming from the south to a northern people, convey the art of governing, of embellishing, and of aggrandizing the capital and the towns: they increase the royal power and the extent of the empire.

479. Men of the north, on the contrary, have terminated their career miserably as kings of the south.

It is that the northmen are more temperate, more inured to privations, than the men of the south; but they have less acuteness, less political adroitness: they have, moreover, a repugnance to the exercise of a cunning shrewdness which, to them, savours of perfidy.

Thus, France has given kings to Poland. Lately, a Frenchman of the south became King of Sweden, and prospered there.

England has taken her kings from the continent and towards the south.

The Bourbons were originally from the south of France. The

Emperor was born in Corsica. Italy gave us scribes, then literati, then queens, and at last an Emperor.

Napoleon had been happy as King of France; but he wished to employ force against the men of the north, he wished to conquer them, and it was contrary to an important law.

The fortune of the warrior Napoleon had its rise at Toulon, it expanded into greatness in Italy, it suffered in the mountains of Spain and against the English; it was deeply wounded at Moscow; it perished at Waterloo. Emanating from the southern extremity of France, his fortune succumbs at the northern extremity.

What was the end of one of the last kings of modern Greece?

And the Latin empire, how rapidly has it fallen!

What was the end of the Stuarts of Scotland, in England?

What was the end of Conradin?

Mountainous Spain has not much more political adroitness than the north; and yet what was the fate of the grandson of Louis XIV. upon the Spanish throne?

Two kings of Spain, born at the north, although assisted by the political advantages of the south, have been struck, whilst upon the throne, with a profound melancholy, and have abdicated—Charles V. and Philip V.

The German empire has taken its chiefs from Saxony, then from Swabia, then from Switzerland; always descending to the south, along the Rhine.

Vienna, in such proximity to the Alps, ought to extend its power into the Tyrol, and into upper Italy.

The fixed position of the capital of the empire at Vienna ought to attract to the empire the people of the Rhenish mountains, the real Germans; this will finally be accomplished.

482. There are spots where we find both a meridian heat, mountains, maritime banks, rivers, marshes, &c.

The inhabitants of these spots are at the same time adroit, energetic, generous, and perfidious. These are people greatly celebrated among nations—the Romans.

483. It is the warmth of the day, the coolness of the nights, the air which is breathed, the repose of body which the climate requires, and which the paucity of their wants permits, which produce in men near the equator that mental acuteness, and those ideas and passions observable in them.

484. It is the air which they breathe, the exercise which they take, the character and extent of the tableau which is always present to their view, which produce in mountaineers the ideas, the energy of character, and the inclinations observable in them.

485. Man is impregnated with everything which affects his senses: thus, the man accustomed to see the filthy refuse of streets, or the low muddy banks of rivers, has ideas, words, intonations, and vocal articulations corresponding with that which he is in the constant habit of seeing and hearing.

486. At the same time, the excess of an evil produces its own remedy: thus, cleanliness reigns in Holland; we are less inconvenienced by the cold in Prussia than in France.

487. The northman imbibes ideas and passions more within the dwelling than without; the man of the south, more from without than within the dwelling.

488. If you wish really to understand history, bear in mind, and encourage by observation and reflection this known, but disregarded truth—every man, every family, every society, every community has a poetry to which it sacrifices much material property.

If you are only cognizant of the pleasures of the senses, do not deny those of the heart and mind; they are the very soul and existence of a vast number of men.

One is endeared to a site because it was the place of his birth or the home of his youth; another, to the tomb of his father; another, to the honour of his name; another, to the purity of his wife and children; another, to his religion.

It is said that the French Emperor recommended his soldiers to pay great respect to the wives and daughters of the Vendeans.

GEOGRAPHY OF PALESTINE.

No. VI.

(Continued from page 86.)

In the north-east of the territory, afterwards called Judæa, was situated the inheritance of the tribe of Benjamin—a small, but fertile, and well-cultivated district. The warlike spirit of this tribe was preintimated by Jacob's declaration that Benjamin should ravin as a wolf; that in the morning he should devour the prey, and in the evening divide the spoil. The division of the spoil may refer to the common interest which Judah and Benjamin had in subduing the Jebusites, who dwelt on the conterminous limits of those two tribes. Judah and Benjamin, it will be recollected, were the only territorial tribes (the tribe of Levi being included) who maintained allegiance to the house of David when Palestine became divided into two kingdoms. Saul, the first king of the Jews, was of the tribe of Benjamin; and David, whose accession displaced the family of Saul, was of the tribe of Judah: but the position of Jerusalem was a sufficient inducement for the Benjamites to make common cause with the tribe of Judah against the rebellious arrogance of Jeroboam, the usurper of Ephraim. The chief dignity of the tribe of Benjamin, viz., the possession of Zion, and of the Divine presence dwelling between the cherubim, was foretold in these words of Moses: "The beloved of the Lord shall dwell in safety by him; and the Lord shall cover him all the day long, and he shall dwell between his shoulders." (Deut. xxxiii. 12.)

The principal towns in the tribe of Benjamin were Jericho, Bethel, Gibeon, and Jebus or Jerusalem.

Jericho was situated in a fertile plain abounding in palm-trees, and was the first city in Palestine that was attacked by the tribes of Israel, when they had crossed the Jordan, to commence the working out of a great purpose of Heaven revealed to their forefather Abraham. The extraordinary events that marked the progress of that patriarch's descendants, on their way from the plague-stained Nile to the mysterious gateway which was opened for their passage across Jordan, had filled the inhabitants of Jericho with alarm, and, in one instance, that of Rahab the harlot (or rather innkeeper), inspired such faith acquiescing in the designs of heaven, as disposed her to "receive the spies with peace." The city was utterly destroyed by Joshua; and a curse, pronounced over its smoking ashes, foretold the destiny of the man who, in Ahab's days, presumed to attempt the rebuilding of Jericho. (1 Kings xvi. 34.) We can hardly suppose, therefore, that the Jericho of the New Testament occupied the scene which the blast of the rams' horns had laid desolate. The earlier city was probably close by the fountain of Elijah; and that of the time of Herod farther south, near the sources of the brook Cherith. The later Jericho, restoring to the plain a "city of palm-trees," without involving exposure to the curse, is now probably represented by some ruins a little to the west of the miserable modern village called er-Riha.

Several travellers concur in describing the road from Jerusalem to Jericho as extremely dismal and dangerous, conducting along the edges of precipices, and through deep rocky valleys. This circumstance shows the force of the conception which fixed on the scenes referred to in the parable of the good Samaritan, and will dispose us to execrate more strongly the inhumanity of the Priest and Levite, who could withhold succour from a fellow-creature in a situation so desolate.

At Jericho was the residence of Zaccheus the publican, who climbed up into the sycamore-tree to obtain a sight of Jesus. A solitary palm, the only representative of the beautiful trees that anciently adorned the plain, has been imagined by some pilgrims to be the sycamore of Zaccheus! and an old castle is regarded by them as having been his habitation. Thus does the venerative faculty in man, when cultivated apart from the superintendence of sober reason, induce upon his mind a superstition that lowers the dignity, and lessens, while it may seem to increase, the strength of faith. Heaven's wisdom has not suffered the land of its ancient peculiar people to preserve, to any extent, relics that can be indisputably connected with the persons of individuals noted in holy writ; that we may "walk by faith and not by sight;" that our affections may be directed rather to the celestial home where the departed righteous are now, than to the precise earthly scenes and objects with which they were brought in contact during the days of their pilgrimage.

Bethel was a border town between Ephraim and Benjamin, about twelve miles north of Jerusalem. The place was first called Bethel by Jacob, to indicate that he accounted it "none other but the *house of God*," in consequence of the vision that was here vouchsafed to him. Although Bethel was assigned to Benjamin, yet, as it was wrested from the Canaanites by the tribe of Ephraim, it was afterwards included in the kingdom of Israel. Bethel was made by Jeroboam the southern seat, as Dan was the northern, for the worship of the golden calf. This desecration of a spot where the ark of God had once been deposited, prompted the Jews to designate the place by the contemptuous appellation Bethaven (house of vanity). On the high ground eastward of this spot, viz., between Bethel and Ai, Abraham first pitched his tent in Palestine, and thence looked forth over the length and breadth of the land which God assured him his seed should inherit. A scene of ruins, now called Beitin, and occasionally inhabited by a few Arabs dwelling in tents, has been identified as the site of the ancient Bethel.

Gibeon was a distinguished city of the Hivites, who craftily induced Joshua to spare them by a covenant of peace. This league prompted the Amorites to make war against Gibeon; and, during the battle in which Joshua repulsed them, the sun and moon stood still at the command of the Hebrew leader. At Gibeon, as being the place of the tabernacle, Solomon had come to worship, on the occasion when God appeared to him, and granted him the wisdom for which he was so renowned. El-Jib, a small village about five miles north of Jerusalem, and full of old ruins, occupies the site of the ancient city.

Jerusalem, the city of pre-eminent interest in Palestine, lay towards the south-west of the tribe of Benjamin, and immediately north of Judah. It was a city in the days of Joshua, but acquired its chief importance in the days of David, who made it the metropolis of the kingdom, and obtained Divine sanction to make Mount Moriah the site of the Temple. A more central situation, such as Samaria, may appear preferable in the view of travellers, as the place whither the tribes of the Lord should repair on the days of chief solemnity; but Jerusalem was the place which God chose "to put his name there;" and certainly it was in a position sufficiently suitable for its being the capital of the reduced dominions of Rehoboam. The place had been called Jebus, as being inhabited by the Jebusites; and when David, who had reigned in Hebron over the single tribe of Judah, was called to rule over the whole of Israel, he took Zion from the Jebusites, and named it, as his own dwelling, the City of David. Here he placed the ark of the covenant, and built an altar to the Lord; but for his son, Solomon, was reserved the celebrity of having built the magnificent Temple of Jerusalem. The city was variously affected in its fortunes according to the good or bad government of its princes; but at length, about 100 years after the time of Manasseh, the heinous provocations of unrighteousness brought against it the besieging force of Nebuchadnezzar, who laid waste its walls, palaces, and temple. After the captivity, the city was rebuilt; a second temple being reared, whose glory was predicted to surpass that of the first, as being honoured by the presence of Messiah within its walls. The history of Jerusalem, which is almost a history of Palestine, is too affluent in details to be presented here; and a selection of its more prominent parts would only furnish what is already pretty generally known. We merely add, therefore, on this part of the subject, that the Temple and City had been magnificently improved by Herod just before the advent of our Lord; and that this was, alas! but an adorning of the victim for sacrifice—a preparation to fill with more exulting triumph the hearts of the Roman invaders, who, (A. D. 70,) according to the Messiah's prediction, left not in Jerusalem one stone upon another.

As the land of Israel was the most sacred of all lands, in virtue of being selected by the Almighty as the field on which was to be reared, by gradual preparation, the great harvest of man's redeemed immortality; so was Jerusalem the most sacred spot on the whole area of the Hebrew's inheritance, as being the place which God had chosen, above all others, to put his name there. Many localities had derived an impress of sanctity from being the temporary resting-place of the ark of God; but for Jerusalem was reserved the distinction of being the city of the fixed tabernacle of the Lord of Hosts—the metropolis of theocratic empire, and the scene whereon the Church of the Christian Dispensation should first receive its sanction, its form, and its missionary ordination.

Nearly 2000 years before the advent of our Lord, the Mount on which the great Temple of Solomon was to be built was visited by an aged parent, in company with his son, to render obedience to the mysterious command, which said, "Take now thy son, thine only son Isaac, whom thou lovest, and get thee into the land of Moriah, and offer him there for a burnt-offering upon one of the mountains which I will tell thee of." This was to impress on the chosen eminence a typical character, prefiguring the great ransom-offering to be made by the Messiah. And, at the early period of Abraham's visit, there may have been in this neighbourhood a local habitation answering to the name Salem, which we find constituting the royal title of Melchizedek. Salem, however, signifies peace; and Jerusalem the habitation, or inheritance, of peace: a fit name for the city of that spiritual King whom prophecy denominated the Prince of Peace.

The ancient city of Jerusalem was built on three hills—Moriah, Acra, and Zion,—the two former lying, respectively, north-east and north of the latter. The valleys separating these hills are still distinguishable as depressions, although now in their bosom lie mouldering the ruins of many of Jerusalem's ancient dwellings, filling up and disfiguring those features of nature which once made Jerusalem "beautiful for situation, the joy of the whole earth." The valley between Acra and Zion received the Greek name of Tyropoeon, denoting it the "Valley of Cheesemongers;" and this being joined by another valley separating Acra and Moriah, their common prolongation extended southwards to the Pool of Siloam on the south-east of Mount Zion. The Mount Moriah appears to have been occupied, in the time of David, by a Jebusite named Araunah, from whom the king purchased it for a place whereon the House of the Lord should be erected. For that purpose the summit was artificially extended so as to include a sufficient area for the Temple, together with the storehouses, officers' courts, Levitical residences, &c., which belonged to it. This structure, remarkable not so much for its magnitude as for its magnificence, was begun in the fourth year, and finished in the eleventh, of the reign of Solomon. Only, however, until the death of that monarch did it continue to be the centre of worship for the whole family of Israel. And, after being deserted by one portion of the community, it was often desecrated by the idolatries of the other, and was accordingly devoted by a jealous God as a prey to the hand of spoliation. After being repeatedly plundered, it was burnt by Nebuchadnezzar, (B. C. 588,) and the ark of God with its mercy-seat was consumed in the flames of Jehovah's vengeance. Thus was the duration of *the first house* a period of about 400 years.

The Jews who returned from the land of captivity under the permissive edict of Cyrus, rebuilt the temple in nearly the same number of years which the original structure required. Its duration, amidst many vicissitudes, was about 480 years, at the end of which period it was stormed, and in great part destroyed, by the Roman troops, who assisted Herod the Great in his struggles for ascendancy. About twenty years, however, before the birth of Christ, that prince commenced the execution of a magnificent plan for the restoration and enlargement of the sacred edifice. The design was so vast, or elaborate, that the building operations were not completed at his death; and the work of extension and embellishment lasted so long, under his successors, that the Jews in the time of our Saviour's public ministry could say, "Forty and six years was this temple in building."

The hill on which the Temple was built was well defended, on its eastern side, by the precipices, at the foot of which flowed the brook Kedron through the valley of Jehoshaphat. Similar protection was given by the valley of Tyropoeon on the south. But for the defence of the north and west sides of the sacred eminence, which were more assailable, there was built near the north-west corner, in the time of the Maccabees, a fortress called the Tower of Antonia. From this tower, however, which communicated with the Temple, the Romans rushed into the holy place, to accomplish the Saviour's prediction of its awful ruin; and though Titus the emperor was unwilling that the edifice should be destroyed, he endeavoured in vain to quench the flames which had been kindled by the firebrand of a Roman soldier, and which left for the Jew the humiliating affliction of beholding on a desolate area the place where the temple had stood. This final destruction happened A.D. 70. The emperor Adrian afterwards built a temple of Jupiter on the site of the Temple of the living God. And now on the same spot stands the splendid Mosque of Omar, receiving as worshippers the expectants of a sensual paradise, the champions of what was once a dread alternative—the Koran, or the sword. Around this usurping structure is a verdant lawn, adorned with some olive and cypress trees, which render the scene extremely beautiful. But how affecting is the thought that the bright green sward is but the turf of interment, beneath which the choicest glories of ancient Israel have been ignominiously entombed.

Mount Zion was the highest of the three hills on which Jerusalem was built; having on its western side the valley of Gihon, and on the south that of Hinnom, which at its eastern termination becomes part of the valley of Jehoshaphat. The Tyropoeon divided it from Acra, and its superior height obtained for its habitations the appellation of the Upper City, while those of Acra were called the Lower City. Mount Zion seems to have contained the royal palace, the armory and prison, and the residences of the chief priests. That portion of it which is included in the modern town is now to a great extent occupied by an Armenian convent. It contains, moreover, the Anglican Cathedral Church of St. James—a recent erection connected with the Protestant bishopric of Jerusalem, established by the English and Prussian governments.

The Lower City, on Mount Acra, seems to have contained the ordinary dwellings and public market-places of Jerusalem; and the modern city of Jerusalem is now confined almost entirely within the limits of Acra. But in its north-east quarter is the Church of the Holy Sepulchre, built by the Empress Helena; and if that church really contains the site of the Saviour's tomb, which there are certainly very strong reasons for admitting, the modern town must in this quarter extend its buildings beyond the limit of ancient Jerusalem.

The streets of Jerusalem are very uneven and narrow; and several of its modern dwellings are built on mounds of rubbish, thirty or forty feet above the natural level. The buildings are of stone, and are in general in a very neglected and dilapidated condition. Notwithstanding, however, the deformity which characterizes the particular houses and streets of Jerusalem, the general appearance of the city from a distance is somewhat imposing. From the Mount of Olives, rising eastward from the valley of Jehoshaphat, the traveller obtains his most interesting impression of the aspect of this remarkable city. There is a general incline of its whole area towards the east; so that a very distinct view of it is presented to an observer stationed upon the Mount of Olives. The minarets of the smaller mosques, and the domes of the better class of habitations, form, with the larger edifices to which we have previously adverted, a picture of considerable beauty. But *Gethsemane* is on the side of the Mount of Olives; and that melancholy spot, when contemplated by the Christian traveller, proves a key to the mystery of Jerusalem's degradation. An agony was there endured, with which the Hebrew would not sympathize; and treachery was there perpetrated, with which the Hebrew stained his hand: and now are degradation, and poverty, and vain superstition, the consequent inheritance of that city, which knew not in the day of mercy's visitation the things belonging to her peace. J. H.

SPECIMENS OF PARSING AND PARAPHRASING.

NO. XIV.

[The subjoined passage, selected for paraphrasing, is from a recent translation of Virgil's poem on husbandry, the Georgics, by the Rev. W. H. Bathurst. The poem is interesting chiefly for the information it gives us of the state of agricultural knowledge among the Romans in the Augustan Age. That it should contain assertions which modern science has shown to be incorrect is, of course, no matter for surprise.]

" Survey man's distant tribes, and various homes,
From where the rude Gelonian savage roams,
To bright Arabia's eastern climes, and see
How every land bears some peculiar tree.
Black ebony from India comes alone,
Their native frankincense Sabæans own.
Need I describe the acacia's thickened juice,
The fragrant gum balsamic groves produce;
How white wool grows on Ethiopian trees,
And silken tufts are plucked by the Chinese;
What towering woods the Indian regions boast,
At the last limit of earth's eastern coast;
How, 'midst a people skill'd to use the bow,
No arrow's flight above the trees can go."

(*a*) Parse the words *From, Where, How, Alone, Describe, Produce, What.*

(*b*) Explain the expressions *Distant tribes, Various homes, Gelonian savage, Sabæans, Acacia's thickened juice, White wool, Silken tufts.*

(*c*) Write a paraphrase of the passage.

(*a*) PARSING.

From, prep. governing the "place" or "region" understood. This suppression of the object of a prepos. is exemplified also in the phrases *from beyond Jordan, amounting to above four shillings.*

Where, relative or conjunctive adv.=" in which," modif. *roams.* A conjunctive adverb is one which connects clauses, besides modifying, just as a relative pronoun connects clauses, besides representing a noun.

How, relative or conjunctive adv.="in what manner," modif. *bears* in the first instance, *grows* in the second.

Alone, adj. defining *India.*

Describe, verb, infin. gov. by the verb *need*, governing *juice* and *gum.*

Produce, verb trans. agreeing with its nomin. *groves*, and gov. the relative *which* understood.

What, definitive adjective, defining *woods.*

(*b*) EXPLANATION.

Distant tribes, widely distributed over the earth.

Various homes, places of habitation differing as to soil, productions, &c.

Gelonian savage, a wild people of Scythia, on the south-east of the Baltic.

Sabæans, the people inhabiting that southern part of Arabia called in Scripture Seba or Sheba.

Acacia's thickened juice, what we now call Gum Arabic, produced in Egypt.

White wool, an allusion to the cotton-tree of Upper Egypt.

Silken tufts, the produce of the silkworm, mistaken as the produce of a tree.

(*c*) PARAPHRASE.

Consider the number of tribes of which the human race consists, and the diversity of the situations allotted to them, from the shores of the Baltic, inhabited by the wild Gelonian, to the eastern regions of Arabia; and observe how every land is distinguished by some tree peculiar to it. The black ebony is the production of the Indian soil. Sabæa, in the south of Arabia, is remarkable for its aromatic plants. I need not describe the well-known gum that exudes from the acacia, or the fragrant juices which are collected in balsamic groves; how some trees in Upper Egypt supply the white wool of cotton, and others in China bear tufts of silk; how, in India, the remotest of earth's regions eastward, the trees are so gigantic, that no arrow can be shot beyond their height, even by a people famed for their skill in archery.

Correspondence.

(The Editor begs to state distinctly that he is not answerable for the opinions of his Correspondents.)

METHODS OF GIVING LESSONS ON OBJECTS.

(*Continued from page* 134.)

1. ERROR and ignorance have been denominated twin sisters. Anything, then, that may tend to eradicate these two evils ought to be highly valued; hence, in all good systems of education, exercises which have for their end the cultivation and improvement of the attention, memory, and reason, occupy, and justly, an important place. Lessons on objects, including all that may easily be brought under this term, will form an excellent course of instruction on what may, with propriety, be termed Exercises in Thinking. "Memory and attention," says Abercrombie, "are greatly promoted in young persons by writing; provided it be done, not merely in the form of extracts from books, *but in their own words;* in history, for example, in the form of chronological tables; and on other subjects in clear and distinct abstracts, neatly and methodically written. The most common and trivial occurrences may be made the source of mental improvement—as the habits of animals; the natural history of the articles that are constantly before us, in clothes, food, furniture; articles of manufacture, from a watch to a pin; the action of the mechanic powers, as illustrated by various contrivances in constant use; the structure of a leaf, a flower, a tree. To those farther advanced, a constant source of interest may be found in history, geography, and memoirs of eminent individuals; and in the leading principles of natural history, natural philosophy, and chemistry. Every new subject of thought, which is thus presented to the mind, is both valuable in itself, by the powers which it calls into action, and by proving a nucleus to which new facts may be afterwards associated. The great object to be kept in view, from the very earliest period, is, the paramount importance of the actual knowledge of things on subjects of real utility; the actual cultivation of habits of observation, inquiry, association, and induction; and, as the foundation of the whole, the habit of steady and continued attention. The cultivation of these mental habits is of greater value by far than any one acquirement whatever, for they are the basis of all future improvement, and are calculated to give a tone to the whole character."

2. In most of the Prussian schools, *Exercises in Thinking, a Knowledge of Nature*, &c., have assigned them, in the routine of school duty, a separate hour and place. "These lessons," says Horace Mann, "consisted of familiar conversations between teacher and pupils, on subjects adapted to the age, capacities, and proficiency of the latter. With the youngest classes, things immediately around them—the school-room, and the materials of which it had been built; its different parts, as foundation, floor, walls, ceiling, roof, windows,

doors, fire-place; its furniture and apparatus; its books, slates, paper; the clothes of the pupils, and the materials from which they were made; the duties of children to animals, to each other, to their parents, to the old, to their Maker;—these are specimens of a vast variety of subjects embraced under the above heads. As the children advanced in age and attainments, and had acquired full and definite notions of the visible and tangible existences around them, and also of time and space, so that they could understand descriptions of the unseen and remote, the scope of these lessons was enlarged, so as to take in the different kinds of nature, the arts, trades, and occupations of men, and the more complicated affairs of society."

3. "We cause children," says M. de Gerando, "to repeat propositions, to give definitions, but we neglect to accustom them to see actual things. That which forms the judgment, by the knowledge of facts, is observation. For not only are children capable of observing, but they are also delighted to observe. Let them, then, satisfy this taste, which is the instinct of a real necessity. Only, train them not to trust to first appearances, but to observe with order and continuity, and to note down that which they observe. The things the most familiar, the most simple, can be applied to this useful practice. And instead of passing over, we should begin with that which is immediately within our reach."

"Pestalozzi has rendered us an immense service by teaching us how we can thus direct the observation of children to those objects which surround them. The more near these objects are, with regard to the child, the better he is able to seize them. And to assure ourselves that the child does observe, let us require him to give a description of that which he has seen. He will thus feel the necessity of observing still more closely and attentively.

"The study of natural history has a marvellous influence in giving a right and sound judgment to those who assiduously devote themselves to it; because it demands a habit of observation, at once calm and methodical. The spectacle of nature, considered with an attentive eye, is to such a one a simple and mute logic, more efficacious than that of books. Do not hesitate, then, to teach the elements of natural history to those children who attend our schools. These elements are full of attraction, even for the very youngest children; and they do not withdraw them from the sphere of their ordinary impressions. Does not childhood delight in the productions of nature which come within its reach? An insect, a flower, a leaf, a grain of sand, may be made the subject of observations at once familiar and useful. To exercise children to observe, is to make them notice the appearance, shape, or outline of objects, their qualities, the parts of which they are composed, and the uses to which they are applied. But the making them seize the facts, isolated and detached, is not sufficient; they must also be taught early to observe how events are linked together, and the connexion which exists between effects and causes. Nothing more effectually induces to the formation of a sound judgment, than the accustoming children to find out and to understand the *why* of each thing. Their own personal experience, however small, the experience of every moment, will furnish an abundance of texts for this sort of induction, The course of the water, the falling of a stone, the ascent of the smoke, the return of the principal celestial phenomena, the laws relating to the growth of plants, all the processes in the economic arts, are so many opportunities prepared beforehand, to enable us to show to children a cause which acts, and an effect which is the consequence."

4. In the course of instruction in natural history in the Institutions of Hofwyl are the following interesting remarks:—"The various divisions of natural history should be intimately connected. The three principal branches must indeed be taught in distinct lessons; but all violent separation should be avoided as injurious. Mineralogy, botany, and zoology should be taught alternately, and always as much as possible with reference to each other, that the power of observation, whose cultivation is one great object in this branch of instruction, may be developed as completely and variously as possible.

"It is desirable that the teacher to whom the preparatory elementary course of instruction is entrusted should accustom his pupils, in their occasional walks, to observe and describe the various forms which present themselves,—the colour, transparency, brilliancy, and weight of objects,—the root, stem, branches, leaves, and flowers of plants, and the exterior parts of animals. The names of fruit and forest trees, garden vegetables, domestic animals, &c., may be daily and easily taught; those of minerals shóuld be deferred. But the learning of too extensive a nomenclature is to be carefully avoided, both before and during the course of instruction, lest the boy should acquire the very natural idea, in such a course, that the learning of names is the principal object."

I have thus directed attention to the methods of giving lessons on objects; their usefulness; the importance that ought to be attached to such a course in all schools, infant and elementary; to the influence such lessons must have in developing the powers of comparison and observation, and in forming the judgment and reason; and have adduced extracts from the best educational authorities, in order to more strongly impress upon the minds of all engaged in the right education of the young, the reasons why they ought to devote a certain portion of their time every week to unfold to them the wonders of those objects and phenomena which are full of the manifestations of Wisdom, of Goodness, and of Power.

HEADS OF A LESSON ON A VEGETABLE SUBSTANCE.—INDIA-RUBBER OR CAOUTCHOUC.

1. Particulars regarding external appearance, qualities, &c.
2. Where it is found.
3. How the substance is obtained or prepared.
4. Uses to which it is applied.
5. History.

SPECIMENS OF NOTES ILLUSTRATIVE OF THESE HEADS.

1. (*a*) *The Tree.* Tree large, straight; attains the height of fifty or sixty feet; throws off at the top numerous branches.

(*b*) *Piece of India-rubber:* black, but, in pure state, white;

very pliable; elastic; insipid; inflammable; impervious to water: insoluble in water; soluble in ether, &c.

2. The tree is found in America and Asia; chiefly in South America, in Guiana, and along the borders of the Amazon; in Mexico.

3. To get the caoutchouc, the trees are pierced in rainy season; a thick whitish juice exudes; becomes hard and darker when exposed to the air; comes to Europe from America in shape of bottles, which are thus made: model made of clay, a thin coat placed on it, then allowed to dry over a fire; another coat put on, then dried, and so on, till it is the proper thickness. When soft, lines are drawn with a blunt tool; these permanently remain. When quite dry, the clay model is crushed and the particles shaken out of the bottles. We get it also in shape of beasts, birds, &c.; also in flat pieces, which come from Asia.

4. Natives of S. America make boats, water-proof leggings, &c., of it. In England, cloth is made waterproof by being coated with it when liquified in oil distilled from gas tar—two or three surfaces are put together to form a double kind of cloth; this cloth also air-proof: it is used for beds, cloaks, cushions, life-preservers, &c. Caoutchouc combined with wool, cotton and linen, forms braces, straps, bands, &c. Worked into tops of gloves to keep them firm to the wrist. Been tried as a pavement in lobbies, squares, &c. Forms the buffers of railway carriages.

5. Discovered in 1735 to be juice of a tree; brought before as a curiosity from S. America—but nothing known of its nature or mode of obtaining it; M. de la Condamine, member of the French Academy, first learned its origin. More than 5000 cwts. imported here every year.

QUESTIONS TO BE GIVEN VIVA VOCE.

1. What is particular about this tree? To what height does it grow? Of what colour is caoutchouc, when pure? Explain the term pliable. What does *ble* mean? What is the meaning of elastic? Can any one give its etymology? Name another substance that is elastic. In what is india-rubber soluble? Mention a substance that is very soluble. What do you mean by inflammable? What does *in* here mean? What does it mean in the word *insoluble?* Give another word where it means *in* or *into.* What word means without taste? What that which water cannot pass through?

2. Where is the india-rubber tree found? Where is America? How does it lie from Europe? In what part of America is Guiana? What is the Amazon? Where is it? Where should I look for Mexico?

3. Does caoutchouc grow on a tree? What is it then? Tell whether the tree is cut down to get this substance. Why would they not cut it down? How do they get it from the tree? When is the tree pierced? What happens after it has exuded from the tree? Explain the word exude. In what form does it generally come to us? Tell how this shape is given. How do they get the model out? What is done to make the caoutchouc black? Where do the flat white pieces come from?

SIMILAR QUESTIONS TO BE PROPOSED ON HEADS 4 AND 5.

The following questions are to be written on the black-board, and the answers are to be put down either on paper or on slates. The numbers do not correspond to the headings that are given above, but are adopted to teach the children habits of order and neatness, and to keep the one question or answer distinct from the other.

1. Write the particulars concerning the external appearance of the india-rubber tree.
2. Mention all the qualities of caoutchouc, and clearly explain the meaning of each term.
3. Mention under each of the following heads such substances as are inflammable, elastic, pliable, insipid and soluble.
4. Explain the mode of obtaining and preparing india-rubber.
5. Specify the precise locality in which the tree is found.
6. Enumerate the uses in the arts, &c., to which india-rubber is applied.

R. M. A.

A SHORT LESSON ON THE RIVER SYSTEMS.

NOTES.

River, definition of; origin, source, mouth, right and left bank.
Primary rivers, tributaries, confluence, affluents, feeders.
River system, definition of; illustration of, basin, water shed.
Classes of rivers, oceanic, continental, uses.

LESSON.

A river may be generally defined, as a stream of water rising inland, and emptying itself into the sea.

Origin. Rivers have their origin, either in the melting of the glacial ice and snow, or in springs, a number of which unite to form a stream, or otherwise they flow from lakes.

The commencement of a river, or the most distant point at which it originates, is called the source; the part at which it flows into or joins the sea, is called the mouth; in descending the river, that is in following its direction from source to mouth, the bank on the right hand is called the right bank, and the bank on the left hand is called the left bank.

A primary river, in its course towards the sea, is commonly joined by many other rivers, which are called tributaries or affluents; those which flow in at the right bank are called right-hand tributaries, those on the left, left-hand tributaries; the part at which the tributary joins its primary, is called the confluence. The affluents themselves also sometimes receive the contents of lesser streams; these are called the feeders.

A primary stream with its affluents and feeders, forms what is called a river system, which system is called after the name of its primary.

A river system, marked out on the black board, would have something the appearance of an espalier, the trunk representing the primary river, the branches the affluents or tributaries, and the twigs the feeders.

The extent of country drained by a system, is called the hydrographical region or basin of the river, which latter term is also applied to the channel actually occupied by the water.

The basin of a river in its more extended sense, may be defined by an imaginary line passing through the sources of its feeders.

That portion of country which separates one river system from another, is called the water parting or water shed.

The roof of a house forms an illustration of a water shed, the ridge being the water parting, and the sides of the roof representing the country which is drained in different directions. The water shed, though commonly formed by a lofty range of mountains, yet sometimes consists of but a slight convexity of surface. As an illustration of the former may be instanced the Alps, separating the systems of the Rhine, the Rhone, the Danube, and the Po; and of the latter, the water shed separating the systems of the Dniester and Dnieper, which is formed of very slight elevations on the great plain of Russia, also the Bancos and Mesas of the Llanos of South America: the Bancos are but about four or five feet high, and the Mesas rise so gradually as to be scarcely perceptible.

It was stated as a general definition, that a river is a stream of water rising inland and running into the sea; but this is not always the case; hence arise two classes of rivers, namely, oceanic and continental.

Oceanic are those which either directly or indirectly flow into the Ocean, as the Amazon, the Danube.

Continental rivers are those whose waters never reach the ocean, but which flow either into lakes, unconnected with the ocean, as the Volga, the Jordan; or otherwise they are absorbed in sandy deserts, as many rivers of central Asia.

Of those rivers which contribute to the ocean, by far the greater number are connected with the Atlantic. All the leading rivers of Europe except the Dwina; many rivers of Africa, and the mighty systems of the Amazons, the Mississippi, the La Plata, the Orinoco, and the St. Lawrence from America.

The Pacific, considering its great extent, has but few river contributions, and none of importance from the American side save the Columbia and Colorado; Asia, however, discharges into it the great systems of the Amour, Yang-tse-Kiang, Hoang-Ho, Si-Kiang and Camboja.

The Indian Ocean also receives from Asia the Ganges, Brahmapootra, Irawaddy, Indus, and Euphrates.

The Arctic Ocean also receives from Asia, the Obi, Yenesei, and Lena; the Dwina from Europe, and the Mackenzie from America.

Uses of rivers. Rivers serve many and important ends; among which may be mentioned drainage, irrigation, and navigation; they also afford a supply of food, and consequent employment to man; and furnish us with water-power, available for various useful purposes.

BOARDING SCHOOLS FOR POOR GIRLS.

LETTER II.

My dear Friend,—I will begin *da capo.* Having arranged the plan of my school in my head, I sought among my poorer acquaintance a suitable person for a mistress, and soon found a young widow, who was struggling to maintain herself and two children by needle-work. She was a beautiful needle-woman, but her health was bad, and her earnings seldom exceeded five shillings weekly, out of which sum she paid two for house-rent. I proposed to her to move into two rooms, of which I would pay the rent, to keep a working school according to my plan, for which she should receive 6*d.* from each scholar weekly. Having a direct interest in the number of scholars, she soon persuaded twelve or fourteen girls to come regularly, and, according to my directions, the school was opened with prayer and reading of the Psalms and lessons every morning, after which they worked till twelve, then separated for dinner, and returned again to their work for three hours in the afternoon. To make this time profitable as well as pleasant, I lent them amusing books, which the best readers in turn read aloud to the others. The girls soon learned to work well, and had plenty of work sent in to employ them, as I took care to fix low prices. I also deducted the expenses of needles and cotton, but the rest of their earnings I paid to the girls, advising them, however, to put the money into the clothing club. After some months, an orphan girl came to school, whose friends wished her to board with the schoolmistress; and the circumstances of two or three of the scholars were such as to make it desirable for them also to do the same. At this time I had saved about twenty pounds, and I thought it a good opportunity of putting my full plan into execution. I now proposed to the widow to board as well as lodge herself and two children, and to give her ten pounds per annum for clothes, henceforth receiving myself the sixpence from each day-scholar, and four shillings weekly from each boarder.

The school has now become a very much larger one, and the quantities required of food have proportionably increased, but I have not changed the general plan of living, which I settled thus:—On Thursday a piece of beef (now about 20 lb.) is sent in. This is boiled on Friday, and taken out of the pot about one hour before dinner, when a quantity of rice and vegetables are added, making very good *soupe maigre.* On Saturday, about 10 lbs. of inferior but wholesome meat make a pudding. On Sunday, the beef boiled on Friday makes its appearance with plum-puddings, and, if there is any one at home to cook them, hot potatoes. On Monday, about the same quantity of meat as on Saturday makes broth. On Tuesday the remains of Sunday's dinner are eaten, with baked rice-puddings. On Wednesday, plain suet dumplings; and on Thursday, a meat-pie or pudding as on Monday and Saturday. The bread is home-made, as being cheaper, more wholesome, and for the sake of teaching the girls that very useful accomplishment. Breakfast is at eight, consisting of bread and butter, tea, or rather milk and water, and bread and treacle at six; dinner at one. The girls all rise at six, and go to bed at seven, eight, or nine, according to their respective ages. At first, each girl in turn was cook for the rest for one day only; but I found this plan did not answer, as the girls forgot what they were taught. I now appoint a cook for the week, who has time to learn her business more thoroughly.

I will only add to this letter a few details on the subject of furnishing. New bedsteads cost little more than second-hand ones, and are, of course, much stronger and better. The village carpenter will make them for 10*s*. each. Curtains are quite unnecessary luxuries; but you must allow three blankets to each bed at 10*s*. 6*d*. per pair, two pair of sheets, which need not cost above 5*s*., as you can buy unbleached calico sheeting at 5*d*. per yard, which will wash and wear well. Chaff mattresses are very comfortable and economical; if covered with the same brown calico, they will not cost above 5*s*. each, and bolsters not more than 1*s*. 6*d*. The younger girls will make patchwork quilts at no expense; and if there are any very little ones, they may make some paper pillows, which will be useful if you admit into your school a few girls of a higher class, as I have done.—I am, &c.

LETTER III.

MY DEAR FRIEND,—I have already spoken of my first object, that of raising intellectually, morally, and religiously, a low and unnecessarily degraded class of my fellow Christians, but I have hardly dwelt sufficiently on the state of the case. Allow me, therefore, to say a few words on the subject before I proceed to speak on the *second* object I have in view, namely, that of educating with them a higher class, whose payments shall help to support the institution, and who shall receive a first-rate English education on Church principles, instead of the training for dissent, or from dissenters, which they are now very generally receiving. To speak of the *first object*. I will not pain you by bringing forward the many proofs of immorality which meet us alike in town and country. Ask those who keep register offices in towns, and they will tell you that a virtuous young woman is scarcely to be found. You will say, " The best servants do not go to register offices;" but hundreds do; and of these this is the report. Ask the country clergyman the state of his parish, and with sorrow he will confess that it is not much less polluted than the town. Indeed, there are country places absolutely worse than towns. Only last night a friend told me, with evident satisfaction, that her husband had had the pleasure of marrying two couples during the past year who were perfectly respectable. *Two* out of a large number and this an *improvement!* One obvious cause of this low state of morality is the want of sleeping accommodation. How can a girl accustomed to sleep with father and mother, grown-up brothers and sisters, perhaps even lodgers, in the same room, retain any feelings of modesty? The same friend told me that she knew a case of this kind in which the mother and eldest *unmarried* daughter were confined nearly at the same time in the same room, which was also the sleeping-room of all the members of the family, including grown-up sons and a daughter of fifteen! Had there been a school like mine in the neighbourhood, the poor girl might have been taken from this demoralising scene, and taught that " for these things' sake cometh the wrath of God on the children of disobedience." Had no rich friend stepped in to save her by placing her there, her father and mother, warned by the fate of their elder daughter, might have denied themselves some comforts and paid two shillings a week for her maintenance, remembering that they could not keep her at home for much less, and hoping that in a short time she would repay them. " Such a girl should go to service," you will perhaps say. If she does, what is the result? At fourteen she is set to work only fit for a woman. If, in a town, to carry a child or to carry weights up and down stairs; if in the country, to assist in farm work equally unfit for her age, and after a few months of hard labour, the hospital or the workhouse receives her, and again after a few months send her forth to seek still lower places, and to drag on a miserable degraded life. Are there no places fit for girls, then? Very few indeed. Here and there an old lady keeps one maid and a girl to help her; two old or poor young ladies want a girl to wait upon them; an active bustling tradesman's wife, or small-farmer's wife, who does all the work herself, wants a girl to assist her; a large family in which a girl is wanted to do needlework: in all these cases the girl who gets a place is a lucky girl, especially the one who helps the old lady's one maid—she will have to do her work thoroughly, far better than she could learn it at school, where the governess has twenty to teach, and this old lady (not governess) has but one. And for one place of this kind there are twenty of the kind I first named, especially among tradespeople whose wives are too fine to cook their husband's dinner, or clean their own houses, and who are too poor to pay a woman. They hire a wretched girl from 12 to 14, and having ruined her health for life, they send her away and get another.

I must also allude to another opportunity you may have of doing good, if you establish a school of this kind. You may have the happiness of restoring even whole families to the Church, which they or their fathers have left in pride or ignorance. I will relate an instance:—Soon after my school was opened, a woman came to beg I would admit her daughter as a day-scholar. I gave her the rules, which required constant attendance on Sundays. This she refused at first to allow, but afterwards consented. I found the whole family were Anabaptists, and, of course, that the child had never been baptized. Under these circumstances I would not allow her to say the first part of the catechism in her own name, but only as referring to those who had received the blessing of Baptism. I did not fail to point out to her the great loss she had sustained by her father's heresy, though I taught her to consider him as having been unfortunate in his early instruction, rather than wilfully wrong in his mature judgment. In a year's time, by God's help, she had become very anxious for baptism, and begged me to intercede with her father to gain his consent.

For this purpose I called upon him, and should soon have been deep in the mazes of controversy had I not refused to argue the abstract question, impressing upon his mind that on his own principles he had no right to refuse his child's wish. The baptism she would receive could not do her harm—might, he must allow, possibly do her good, and would not prevent her eventually receiving his baptism, if in later life she should adopt his opinions. Thus urged, he consented to give his permission as soon as he should be satisfied of the sincerity of her wish. I immediately returned and sent Susan, who soon after received that name as a pledge of her adoption into the family of God. The end who can tell; this child is the eldest of ten, and may be the blessed means of bringing them also into the fold of Christ.

Sincerely yours,

M. S. R.

CANDIDATES FOR GOVERNMENT CERTIFICATES.

Sir,—I am glad to use the pages of your well-known "Journal" to give a little advice to the candidates for Government certificates. I believe that it is a well-ascertained fact that most of those who fail after due preparation, fail, because they have not paid sufficient attention to the commonest subjects. They *blunder over first principles.* Or they *teach badly*, for want of method. A word to the wise: I am one of those who prefer short letters to long ones, so I will say no more, except that I am your

Constant Reader.

Notices of Books.

A VIEW OF THE EVIDENCES OF CHRISTIANITY; IN THREE PARTS: AND THE HORÆ PAULINÆ. BY WILLIAM PALEY, D.D. A NEW EDITION, WITH NOTES, AN ANALYSIS, AND A SELECTION OF QUESTIONS FROM THE SENATE-HOUSE AND COLLEGE EXAMINATION PAPERS: DESIGNED FOR THE USE OF STUDENTS. BY ROBERT POTTS, M.A., TRINITY COLLEGE, CAMBRIDGE. (London: *Longmans.*)

The copious title-page of this valuable volume so fully describes its contents, that we are spared the pains of any further analysis. The editor, however, does not allude to his own excellent preface, which, with other suggestive matter, contains a succinct history of the introduction of the Holy Scriptures and the Evidences of Christianity into the University examinations at Cambridge.

PALÆSTRA LATINA; OR, A SECOND LATIN READING BOOK. ADAPTED TO THE ELEMENTARY LATIN GRAMMAR. BY BENJAMIN HALL KENNEDY, D.D., PREBENDARY OF LICHFIELD. (London: *Longmans.*)

Dr. Kennedy's Second Latin Reading Book is designed, as the learned author informs us in the preface, for the instruction of boys who have somewhat advanced in a knowledge of the Latin language, and who have access to some elementary works on mythology, antiquities, and to a Latin Dictionary, in which proper names are comprised. On this account it has not appeared necessary or desirable to add a large body of notes. It consists of a series of examples, illustrating all the rules of Latin Syntax. The following suggestions for the use of these rules appear to be applicable to other languages besides the Latin, and deserve the careful attention of all teachers of language:—

"The Syntactical examples in this Reading Book are designed to be used in the following manner, when learnt for the first time:—

"I. Let each sentence be construed *vivâ voce* in the usual way, Latin words with English (Servius Tullius, *Servius Tullius*, habebat, *had*, &c.).

"II. Having the Latin before him, let the boy first read aloud a Latin sentence, and then recite the equivalent English.

"III. Having the English before him, let the boy first read an English sentence, and then recite the equivalent Latin.

"IV. Let the boy write down the Latin in the English order of construing, and the English interlineally beneath.

"V. Let him parse the Latin words in the same order, in writing, according to the method laid down in the Elementary Latin Grammar, sec. 100, p. 85, and afterwards *vivâ voce* reciting the rules.

"N.B.—On first going over, it may be well to ask no Syntax rules but those exemplified in the lesson; the second time, all which have been heretofore learnt should be comprised. At this time, also—

"I. The notes are to be studied, and the questions answered which appear under the English version.

"II. The portions of Arnold's book referred to are to be learnt *pari passu* with this, including his Rules, Examples, and Questions at the end of the volume.

"III. The last acquirement of the boys is (when the master has quoted the English of any example here, or in Arnold's work), to recite the Latin (including the phrases here contained), and, when required, to say the rules exemplified. When they can do this fluently they may be considered fit to attempt original Latin prose composition and the translation of longer English sentences, beginning with those given in this book."

THE SECOND POETICAL READING BOOK; WITH INTRODUCTORY DESCRIPTIONS, EXPLANATORY NOTES, AND EXERCISES IN SPELLING AND ETYMOLOGY. BY W. M'LEOD, HEAD MASTER OF THE MODEL SCHOOL, ROYAL MILITARY ASYLUM, CHELSEA. Pp. 132. (London: *Longmans.*)

In a former number of the "Journal" we noticed, with approval, Mr. M'Leod's First Poetical Reading Book, and we give equal welcome to the present Sequel. Great judgment is evinced in the selection of the pieces, relatively to the capacities of children, and the best objects of education; and the assistance furnished by the numerous notes presents the teacher with an admirable means of interesting and cultivating the youthful mind.

We thank Mr. M. for the very great pains he must have taken to furnish this useful and excellent contribution to the school book-case.

A GRAMMAR OF THE ENGLISH LANGUAGE; FOR THE USE OF COMMERCIAL SCHOOLS. BY R. G. LATHAM, M.D. (London: *Taylor, Walton and Maberly.*)

We have already called the attention of our readers to Dr. Latham's various works on the Grammar of the English language. We like the present volume very well; but we candidly confess that, if we had charge of a commercial school, we would buy at once his larger work for our pupils, and not put their parents to the additional expense of paying for this compendium.

A SHORT AND EASY COURSE OF ALGEBRA, CHIEFLY DESIGNED FOR THE USE OF THE JUNIOR CLASSES IN SCHOOLS, WITH A NUMEROUS COLLECTION OF ORIGINAL EASY EXERCISES. BY THOMAS LUND, B.D., RECTOR OF MORTON, EDITOR OF WOOD'S ALGEBRA, AND FORMERLY FELLOW AND SADLERIAN LECTURER OF ST. JOHN'S COLLEGE, CAMBRIDGE. (Cambridge: *Macmillan and Co.*)

THE merits of Mr. Lund, as an elegant mathematician, are far too well known to require any applause from us. His present work may be very advantageously used, not only by beginners but those who are advanced students in the science of which he treats. The collection of easy exercises will be found very valuable to elementary schoolmasters in charge of pupil teachers.

Educational Varieties.

STATISTICS OF FRENCH LITERATURE.—It is calculated that, from the 1st January, 1840, to the 1st August, 1849, there were issued from the press in France, 87,000 new works, volumes and pamphlets; 3700 reprints of ancient literature and French classic authors; and 4000 translations from modern languages—one-third of the latter from the English, the German and the Spanish coming next in numbers, and the Portugese and Swedish languages having furnished the smallest contributions. Nine hundred dramatic authors are named of pieces produced on the stage, and afterwards published; 60 only of comedies and dramas not acted. Among the published works are 200 on Occult Sciences, Cabalism, Chiromancy, Necromancy, &c., and 75 volumes on Heraldry and Genealogy. Social Science, Fourierism, Communism, and Socialism of all sects, count 20,000 works of all sizes; 6000 Romances and Novels; and more than 800 works of Travel. According to a calculation, for which the authority of M. Didot's (the publisher) name is given, the paper employed in the printing of all these works would more than twice cover the surface of the 86 departments of France.—*Galignani.*

NORMAL SCHOOL OF UPPER CANADA.—One hundred and twenty-four names have been admitted on the books as Students of the Normal School during the Winter Session, besides many applications rejected for want of qualifications in the candidates. This is the largest number yet admitted to the Normal School, at the commencement of any one Session.

POPULAR LITERATURE.—The whole subject of popular literature requires the deepest consideration. The press is pouring out every day a tide of books, which distract the attention, weaken the judgment, corrupt the taste, and defy the criticism of the public by their very multitude. Every one, young or old, man or woman, fool or wise, thinks himself able to say something which may catch the public eye, to raise himself either money or notoriety. The whole world is become a great school, where all the pupils have turned themselves into teachers; and the ravenous appetite of an idle people, always craving for some new excitement, or amusement, and ready to swallow the most unwholesome food, is daily stimulating the market. What should we say if a man had the power of volatilizing a grain of arsenic that its effluvium should spread over a whole country, entering into every house, and penetrating to the most vital parts of the body? And yet until it is shown that the human mind is good itself, and the source of good,—that it is not, what we know it to be, save only when purified by religion, corrupt itself and a corrupter of others; this power, which every man possesses and which so many exercise, of diffusing their thoughts over the world, and insinuating them into the heart of a nation, is, in reality, the power of spreading a pestilential miasma.—*Edinburgh Review.*

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 60.—*Proposed by Petit Garçon, Ecclesall National School, Sheffield.*

Two places, A and B, are 100 yards distant from each other, and two persons start from A in the direction C. When they have gone together a certain distance, D, one leaves the other at an angle of 120°, and goes direct to B; the other goes straight along to C (which is 80 yards from A), and then goes direct to B, making, with A C, an angle of 90°. How much has one walked farther than the other?

Answered by Mr. Salter, Durham; Mr. Barnacle, Empingham; and Mr. Herbert, Woolton.

$$\text{Here } BC = \sqrt{AB^2 - AC^2} = \sqrt{100^2 - 80^2} = 60.$$
$$\angle BDC = 180^\circ - 120^\circ = 60^\circ,$$
$$\therefore \angle DBC = 90^\circ - 60^\circ = 30^\circ,$$
$$\therefore DC = \tfrac{1}{2} DB.$$
$$DB^2 - DC^2 = BC^2,$$
$$\text{that is, } \tfrac{3}{4} DB^2 = 3600,$$
$$\therefore DB = 69{\cdot}28, \text{ and } DC = 34{\cdot}64.$$
$$\text{Hence the distance gone by the first} = AC + CB = 80 + 60 = 140 \text{ yds.}$$
$$\text{,, ,, the second} = AD + DB$$
$$= 80 - 34{\cdot}64 + 69{\cdot}28 = 114{\cdot}64 \text{ yds.}$$
$$\therefore \text{the difference of the distances} = 25{\cdot}36 \text{ yds.}$$

QUES. 61.—*Proposed by Mr. O'Clazey, Shincliffe, Durham.*

If the mean temperature of England be c times greater on Fahrenheit's scale than on the Centigrade, what is the temperature?

Answered by Mr. Crampton, St. John's Wood; Mr. Hewitt, Cambridge; and Mr. Elsee, Henley-on-Thames.

Let x = the mean temperature by Fahrenheit's scale, then $\frac{100}{180}(x - 32)$ = the mean temperature by the Centigrade. Hence we have by the question

$$x = \tfrac{100}{180}(x - 32)\,c,$$
$$\therefore x = \frac{160\,c}{5\,c - 9},$$

which is the mean temperature by Fahrenheit's thermometer.

QUES. 62.—*Proposed by Loddes Dodsel, Esq., F.K.Z., A.Y.X., &c.*

If three of the four lines bisecting the interior angles of a quadrilateral meet in a point, the fourth bisector will pass through that point, and the sum of any two opposite sides will be equal to the semiperimeter of the quadrilateral.

Answered by Mr. Righton, Ripley, and similarly by Mr. Sheppard, Gillingham; Mr. O'Clazey, Durham; and Mr. Maver, Aberdeen.

Let A B C D be any quadrilateral figure, and O A, O B, O C, lines bisecting the three angles at A, B and C, and meeting in the point O, also O E, O F, O G and O H perpendiculars from the point O upon the four sides A B, B C, C D and A D, and these perpendiculars are all equal (Euc. 4, 4); joining D O, we have in the triangles D O H, D O G, the side H O = G O and D O common to both, consequently (Euc. 1, 47) D H = D G, and therefore (Euc. 1, 8) the angle at D is bisected by the line from D passing through O. Also because (Euc. 4, 4) B E = B F, and A E = A H.

$$\therefore BA = BF + AH.$$

For the same reason, $DC = DH + CF$,

$$\therefore BA + DC = BF + CF + DH + AH$$
$$= BC + DA.$$

That is, the sum of the opposite sides is equal to the semiperimeter.

LIST OF MATHEMATICAL ANSWERS.

Nero, Berwick, ans. 60, 61, 62; J. Hewitt, Cambridge, ans. 60, 61, 62; J. Brookes, Manchester, ans. 60; W. Righton, Ripley, ans. 60, 61, 62; J. O'Clazey, Durham, ans. 60, 61, 62; H. E. Poole, Anglesea, ans. 60; J. Scott, Low Moor, ans. 60; J. B. B., Pembroke Dock, ans. 60, 61, 62; J. Stollard, ans. 60, 61; F. W. B., Pembroke, ans. 60, 61, 62; J. Wilson, Sebergham, ans. 60, 61; J. Moffitt, Durham, ans. 60, 61, 62; G. B. Bush, ans. 61; H. Cross, ans. 62; G. Barnacle, Empingham, ans. 60, 61; D. Maver, Aberdeen, ans. 60, 61, 62; J. Evans, Pembroke Dock, ans. 60, 61, 62; S. Dyer, Kingston, ans. 60; Emma Royds, Hollingworth Free School, ans. 60, 61, 62; J. Herbert, Woolton, ans. 60, 61; T. Sothern, Burtonwood, ans. 60, 61, 62; Kappa, ans. 60, 61; C. Elsee, Henley-on Thames, ans. 60, 61, 62; F. R. Crampton, St. John's Wood, ans. 60, 61, 62; J. Royds, Belfield, ans. 60, 61, 62; J. Sheppard, Gillingham, ans. 60, 61, 62.

NEW QUESTIONS,

To be answered in our Number for June, 1850.

QUES. 63.—*Proposed by Mr. J. Sheppard.*

On entering a school, I observed by the clock that it was between 9 and 10; on leaving, it was between 10 and 11, the hands having exactly changed places. How long did I stay there?

Ques. 64.—*Proposed by Mr. S. Dyer, Kingston School.*

Given $x^2 = \frac{13x + 6}{9x}$ to find the value of x.

Ques. 65.—*Proposed by Mr. O'Clazey, Durham.*

Suppose the distance between Durham and York to be 60 miles, and that York is 38, and Durham 18 miles east of the same meridian; where must I place myself upon that meridian, so that I may be equidistant from each town?

Intelligence.

London Church Schoolmasters' Association.—The annual dinner of the members and friends of the association took place on Tuesday, April the 9th, at the King's Arms Hotel, Bridge-street, Westminster; the president, the Right Rev. the Lord Bishop of St. Asaph, in the chair, supported by the Revds. W. Fry, H. Hastings, John Hodgson, Thomas Jackson, Charles Kemble, John Gylby Lonsdale, W. Lonsdale, J. Manwing, George Moody, William Short, Thomas N. Staley, Harry Chester, Esq., Wm. Brewer, Esq., M.D., &c., &c. About seventy-five were present, a greater number than ever assembled on any former occasion; among them might be found some of every period in the history of National Schools, from the earliest pupils of Dr. Bell, to the young men fresh from our great Training Colleges, just entering upon the important work of Church Education. "Non Nobis" was sung by some of the members in excellent style, as also the National Anthem. In the course of the evening the company were addressed by several of the above gentlemen on matters connected with the objects of the association; among other subjects, the Rev. John Hodgson adverted to the advantages to be derived, in the way of a safe and profitable provision for those casualties of life to which schoolmasters, in common with all other classes, are liable, from the establishment of the Church of England Schoolmasters' and Schoolmistresses' Mutual Assurance Society, which he strongly advised all present immediately to join. From the Report which was read in the course of the evening, it appears that the state and prospects of the association are most gratifying, the numbers steadily increasing, and large additions having been made during the year to the library, the improvement and efficient management of which seems wisely, in the present state of education, to be a main point with the committee.

The Scripture Education Meeting at Manchester.—Forged Tickets.—The most disgraceful means were had recourse to by the Godless educationists, in order to frustrate the object of the meeting held in the Free Trade Hall on Tuesday evening, in support of scriptural, as opposed to merely secular, education. The admission was by ticket. For tickets admitting to the platform, reserved seats, and galleries, a small charge was made, while to the body of the hall the admission was free by ticket. On Monday evening, at the meeting held in the Corn Exchange, for the purpose of considering an address to be presented by the working men of Manchester to the Rev. Hugh Stowell, Mr. Joseph Pratt, bookseller, Bridge-street, was informed that the advocates of merely secular education intended to issue a large number of forged tickets of admission to the meeting to be held on the following evening. On the following (Tuesday) forenoon a gentleman called at the shop of Mr. Pratt (who was printing the genuine tickets), and informed him that a great number of forged tickets were being issued in various parts of the town. Mr. Pratt, with the assistance of the gentleman who called upon him, obtained several of the forged tickets, and then was satisfied that an attempt would be made to create a disturbance at the meeting in the evening. Accordingly, having previously made the requisite arrangements with Captain Willes, chief constable, for the preservation of the peace, Mr. Pratt, accompanied by his son, shortly before six o'clock, took their position at the door leading to the free seats, supported by eight or nine policemen. At six o'clock, the doors were opened and a great rush was made for admission, the crowd outside being considerable. Mr. Pratt and his son examined every ticket presented, and amongst the earliest given up were many of the forged ones. The forgery was exceedingly well executed, except in one of the lines, "In the Free Trade Hall,"—where there was a palpable difference in the type. A skilful eye also detected that the other letters on the forged ticket were of a somewhat lighter character than those on the genuine one. About fifty or sixty persons having been admitted with forged tickets, it was thought by the friends of the object of the meeting that it was high time to put a stop to the imposition. Accordingly, Mr. Pratt caused a printed notice to be posted on the wall of the hall to the following effect:—"Notice—persons presenting forged tickets will be refused admittance; parties are requested not to crowd the door, as every ticket will be strictly examined." The rush continued, but every ticket was examined, and the persons presenting the forged ones were not permitted to enter the room. Of course the confusion, tumult, and uproar that ensued were considerable, and lasted from six o'clock till dusk, when the door was finally closed. But for the activity, energy, and at the same time dispassionate and discreet conduct of the police, in backing the efforts of Mr. Pratt to prevent the imposture succeeding, the consequences would in all probability have been of a very serious nature. Many parties, on being refused admittance, complained bitterly, stating that they had received the tickets they presented at Mr. Pratt's shop. That is explained in this way. The secular educationists, in a strong, effort to upset the meeting, had stationed in all the streets leading to the Free Trade Hall persons having in their possession forged tickets. These persons, on seeing parties approach the hall, went up to them, asking them in the most obliging manner if they had tickets of admission to the meeting. On being answered in the affirmative they were satisfied, but courteously wished to see that the tickets were proper ones. They then examined the tickets and contrived, in the shuffle, to exchange forged for genuine ones. In this way many opponents of scriptural education were admitted by genuine tickets, and, although those tickets pledged them not to disturb the proceedings of the meeting, created the unseemly uproar, which is noticed in our report of the meeting. It is said that 2000 of the forged tickets were put in circulation. A scheme that requires the aid of such disgraceful conduct is not worth much.

SECULAR EDUCATION MOVEMENT IN MANCHESTER.—*An Address from the Working Men of Manchester to the Rev. Hugh Stowell, M.A., Incumbent of Christ Church, Salford, and Honorary Canon of Chester.*—Reverend Sir,—It is with feelings of profound veneration and respect that we, the working men of Manchester, address you on the present occasion. We are desirous to return you a heartfelt expression of our sincere regard for the many instances in which you have stood forward as the honest advocate of the best interests of the working classes of this country. To your distinguished advocacy we are mainly indebted for very many of the blessings and privileges which we, as working men, enjoy. You have been the honoured instrument in the hands of God of upholding the standard of scriptural truth throughout the length and breadth of the land. You have successfully resisted the introduction of popery or semi-popery into the Church of England. You have hitherto prevented the mutilation of the Bible, and thus maintained the integrity and supreme authority of God's most Holy Word. You have clearly demonstrated the divine obligation and sanctity of the Christian Sabbath, and the indubitable right of the working man to a full participation of the benefits thereof. You have been instrumental in elevating the tone of morality, and of disseminating the pure and undefiled religion of Jesus amongst the inhabitants of this great and populous city. You have ever been the steady and sincere friend of civil and religious liberty, cheerfully according to others those privileges and blessings which you claim for yourself. You have always maintained the cause of the poor against the rich, the weak against the strong, the helpless against the powerful, and the oppressed against the oppressor. You have fed the hungry, clothed the naked, visited the sick, comforted the afflicted, and instructed the ignorant; thus following the example of your Divine Master, who went about continually doing good. Rev. Sir, we cannot conclude this humble address without a brief allusion to the late meeting at the Town Hall, where you nobly stood forward in defence of the great and vital principles of scriptural education. On that occasion you admirably sustained your long-earned character as the working-man's friend; you clearly demonstrated the duty of the State to educate the children of the poor in the best possible manner, by giving them an education not only for time, but also for eternity—an education which would not only develop the mental faculties, but also instil religious principles, thus "training them up in the way they should go, and when they are old they will not depart from it." In fine, to give them such an education as would make them what they were destined by their Creator to be, namely, happy creatures, ornaments of society, a blessing to their fellow men, and, ultimately, inhabitants of heaven. Rev. Sir, we would, in conclusion, congratulate you on the dignified conduct and Christian deportment which you manifested during the discussion, also on the ease and facility with which you demolished the fallacious arguments of the advocates of the secular system. That you may live long in the perfect enjoyment of health and strength, vindicating the rights of the poor, and adorning the doctrine of God your Saviour in all things, is the sincere and earnest prayer of the working men of the city of Manchester. THOS. GREIG, Chairman.

REV. H. STOWELL'S REPLY.—*To the Working of Manchester, who prepared and presented to me, on Tuesday evening last, their affectionate Address.*—Fellow Christians,—You have stood forward nobly in defence of your own character, and in the maintenance of your sacred rights. Your movement has been spontaneous and unprompted. You have felt that you and your children have the deepest stake in the vital controversy which is agitating the community, and that you have therefore the strongest claims to be heard upon the question. Deeply as I appreciate your grateful affection, I must disclaim any title to the ardent praise which you award me, excepting that which lies in the sincerity and earnestness of my desire to subserve the true interests of the working classes. In this respect you have only done me justice. To my Divine Master alone be ascribed the glory, if, in any measure, I have been able to carry out that desire. If I have won your confidence, it has not been by deluding you; I have ever told you the truth, but I have told you it in love.

Mistrust the man who fawns upon you, and beware of him who flatters you. How often are "the people" made the tools of "the friends of the people!" You do well to speak out for yourselves at this crisis. Your sentiments have been in danger of misconstruction and misrepresentation. There was some risk of the voice of the noisy few being mistaken for the verdict of the sober many. You have averred the peril. You have given utterance to the real judgment of the great majority of your order on the all-important subject of Education. It is, indeed, too true, that multitudes are almost indifferent to the education of their children; but it is a flagrant libel upon them to say, that they are *hostile* to *religious* education. Pause not, however, my beloved friends; the struggle is only begun. Let us be fellow-helpers together in the diffusion of sound wisdom, in the promotion of brotherly concord, in the defence of God's truth, and in the furtherance of our country's peace. Let our watchward be—"THE SUPREMACY OF THE BIBLE." In the sanctuary and the senate, in the mansion and the cottage, in the closet and the school — *let the Bible govern all.* Against this principle there is a gathering conspiracy. Here the conflict will be waged; on the issue must depend the safety of our institutions and the destiny of our land. Let us be united, determined, untiring; prompt in action, strong in faith, fervent in charity, "continuing instant in prayer"—and the result is certain. "God will be for us, and who shall be against us?" Thanking you heartily for all your love and esteem expressed towards me—more welcome to me than would be the plaudits of the great—"I commend you to God and to *the word of His grace,* which is able to build you up, and to give you an inheritance amongst all them which are sanctified."—I am, my dear friends and brethren, your obliged and affectionate servant. HUGH STOWELL. Leaf Square, April 18, 1850.

We understand that the teachers of St. James's and other Sunday schools presented addresses to the rev. gentleman, previous to the meeting on Tuesday night, to which he replied in a short speech. Admiration of the rev. gentleman's conduct is general among the Christian public of Manchester, and has extended much further, for we find a meeting of persons at Oldham have passed a vote of thanks to him in fitting terms.

BELGIUM.—The debate on the important bill for State education now before the Chambers commenced on the 9th instant, M. Rogier, Minister of the Interior, opening and addressing himself to the 17th Article of the Constitution, which consists of two paragraphs, the first enacting that "public instruction is free; every preventive measure is interdicted; the expression of offences (*dèlits*) is regulated only by the law;" the second, that "public instruction given at the expense of the State is also regulated by the law." Now, M. Rogier argued that the first of these principles had been carried into effect since 1830, and had been thoroughly established; but that the other had only been partially so, for there was but little education given at the cost of the State, and the time had now come for the State to take up her share in education. However, the real purpose of the law the Minister sufficiently avowed in the following observations:—

"A great deal has been said of liberty of instruction—of communal liberty. Well, pray show me where is this liberty in our country? Where are the establishments founded for middle instruction by individuals? There are not three such establishments in the whole country directed exclusively by laymen. One sole influence avails itself of the liberty of instruction in the country. It is the secular clergy, the regular clergy, and the religious corporations. If we had, in fact, no public instruction given by the State in 1850, we should be in full monopoly—we should have a monopoly of instruction in the hands of the clergy. I understand, I admit, that honourable members of this house may think most conscientiously that that instruction is the only useful, the only durable, the only permissible kind of instruction. I can well understand their theoretically contesting the competence of the State in matter of instruction. There is an opinion which thinks nothing good can come from State education—an opinion which maintains that, from the instruction given in the establishments of the State nothing can come but impieties, impurities, revolutions. This opinion is professed by a number of men whose good faith I would not suspect. We, however, do not belong to that category of thinkers. Whilst admitting instruction given by the clergy, whilst acknowledging its utility and necessity in a country like ours, we protest against these outrages on the education of the State. We maintain that there would be a grave danger in annihilating it. We think that a part ought to be left, the strongest possible, and the best regulated possible, to the Government, to the responsible Government."

"M. Rogier proceeded to defend the article "inviting" the clergy to come to the Government schools to give religious instruction in the following terms:—"The Government invites the clergy to give religious instruction in its establishments. What would you have more? Would you have an imperative formula? Would you make the clergy enter by law into your public establishments? Will you say, the clergy shall give religious instruction? If you express yourself so, the clergy will have the right to give religious instruction; but what will be the guarantees you will furnish it; what guarantees will it demand for itself that this right may not be an illusion? But the law does not merely confer rights; it imposes an obligation; the law orders, the law commands; and when you shall have said in the law, religious instruction shall be given to the clergy, there will be an obligation for the clergy to give religious instruction. They might refuse, but then they would be in open revolt against the law, and such a part surely is not a becoming one for the clergy. It is already too much that the clergy, in the circumstances wherein we are now placed, shows in certain places so violent an opposition to the Government, and does not attempt to calm the people—does not attempt to enlighten them—a function which, in my opinion, would have been becoming to them. But with the imperative formula, the clergy would be ready at once to put themselves into open revolt against the law. This is what has happened in France, where, by the late education bill, the Bishops are admitted into the academic and superior councils. There, indeed, is greatness of soul! there is tolerance! whilst the poor Belgian Government, that assemblage of intolerant men, to say the least, chases religion and the clergy from the law, makes for religious populations an impious law, an atheistical law, a demoralizing law. You see, gentlemen, how they talk of the law; and because we have not commanded the clergy to do a thing they never would have done; because we pray of the clergy to come and give religious instruction in our establishments, we are accused of making an impious law—an atheistical law. Is that good faith? is that moderation? is not that calumny?"

M. Dumortier replied on the Catholic side. He said, "It was idle for the Government, on the one hand, to say, we establish liberty of instruction; and, on the other hand, to cover the whole land with a network of colleges and schools of their own, which would effectually render all private competition impossible, and thus take away, in fact, the liberty of instruction. That some instruction might be given by the Government, as by other corporations, no one would deny; but for Government to do this on the scale proposed, was simply to absorb the public instruction, and to render the first paragraph of the seventeenth article nugatory. He then dwelt at great length on the way in which the bill would affect the rights of education now enjoyed by the communes taking its inspection entirely out of their hands, and centralizing it in the bureau of the Minister. Centralization, again, produced an immense harvest of discontent. If a commune had a professorship to give away, there was not that crowd of hungry expectants who always were gaping for any such place when Government had it to bestow. This had been one great cause of the perpetual agitation and readiness for change that existed in France."

Another objection was the limitation of professors to that class only who had received government brevets of capacity. This created a class of literary pariahs in Belgium, side by side with the privileged class—another obvious source of continued discontent. But of all objections, the most powerful was the absence of religious guarantees. On this head, M. Dumortier observed, "The law may be summed up in two words on this point. Instruction in gymnastics is compulsory: instruction in religion is merely permissive. Such a system, in the present state of minds, must evidently bring us to a situation analogous to that which has produced so many overthrows in France. What has happened in our neighbouring countries? Generations have been brought up without any feeling of duty; they have been taught only the feeling of rights. I am wrong. One duty they have been taught, and that has been called holy—the duty of insurrection. Insurrection, it has been said, is the holiest of duties. In the face of these bad doctrines; in the face of that spirit of disorder which is about to invade society on every side, it is clear that we have a duty to render to the country, and that is, to take care that the education given at the expense of the State—given at the expense of us all—offers all those religious guarantees on which alone reposes the feeling of duty. And here, it is not in the name of the clergy that I ask for these guarantees: it is in the name of society, in the name of fathers of families. Fathers of families desire that the instruction given to their children should be religious."—*Guardian.*

DRAWING CLASSES IN INDIA.—The "Bombay Times" states, that a drawing class has been attached to the Elphinstone Institution, and that it has a very full attendance. It would be well if such a class were attached to every institution of the kind in India. The study is one that interests the natives exceedingly, and would in many instances induce them to attend the schools, when less interesting instruction fails to attract them.

To Correspondents.

WE cannot undertake to notice or to return all rejected communications.

We beg to thank the authoress of the Letters on Female Schools, and to request further communications from her pen.

WALKER is right in his pronunciation of the word *humble*, and your corrector is wrong.

M.—We recommend Macleod's in preference to any others with which we are acquainted.

GEOGRAPHY OF AFRICA.

The following lessons are to be given by the master, *vivâ voce.* They are intended for the most advanced classes; but every teacher can easily adapt them to any of the other classes in school. Before beginning the lesson, the master should have all the materials, which he will require, ready. This is a point that is too frequently overlooked; the non-preparation of these is a loss of time, both to the teacher and the taught; and whilst the master is looking for this or that, the class gets into disorder; for idleness, necessarily, produces this result in school-classes. The materials and apparatus requisite are—a good large map, which should be suspended on a stand so as to be seen by all the pupils; a black-board, a piece of chalk, a duster, and a pointer. And the teacher should never be afraid of using these materials, especially the *black*-board, the most important piece of school-apparatus for the diffusion of *light.* In giving the mountains and rivers, it will be found a useful exercise to sketch the directions of the chains on the board; by this means, these important points in Geography will be the more strongly impressed on the minds of the children, and they will have a clearer idea of the different river-basins. Questions should be proposed both during the progress of the lesson and at its close. Before the commencement of a new lesson, a series of questions should always be proposed, to test the memory of the children, and to dove-tail or connect the last lesson with the one that is to be given.

I.—Boundaries.

Africa is bounded on the north by the Mediterranean Sea, which separates it from Europe; on the west, by the Atlantic Ocean; on the south, by the Southern Ocean; and on the east, by the Indian Ocean and the Red Sea.

It is joined to the Asiatic continent by the isthmus of Suez, a low sandy tract, about seventy-five miles in width, and which separates the Mediterranean from the Red Sea.

II.—Length, Breadth, Area, etc.

From the Mediterranean to its southern extremity it measures 5000 miles; and its extreme width, from the Atlantic to the Sea of Bab-el Mandeb, is about the same (4600 miles). Its whole surface covers a space exceeding 12,000,000 of square miles; whilst the extent of its coast-line is a little more than 16,000 miles (16,048). It has thus only about *one* mile of coast to every 750 square miles of surface.* It is comprised between 37° 20′ N. latitude, and 34° 50′ S. latitude; and between 17° 32′ W. longitude, and 51° 22′ E. longitude.†

III.—Seas, Bays, Gulfs, and Straits.

1. *In the Mediterranean.*

Africa is remarkable for the absence of any large openings into the land, such as we find on the western coast of Europe and the eastern side of Asia. The parts most deeply indented, are those that are washed by the Mediterranean; here are found the Gulf of Sidra and the Gulf of Cabes. The latter was, in ancient times, called Syrtis Minor; and the former, Syrtis Major. These were dangerous quicksands, continually shifting their position. In St. Paul's voyage to Rome mention is made of these: "and fearing lest they should fall into the quicksands, strake sail, and so were driven."

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* Compare Africa with Europe: the latter has an area about ⅓rd the size of the former, whilst its coast line is almost as great, being 15,000 miles.

† These are the extreme points on each coast.

2. *In the Atlantic Ocean.*

On the western coast, towards the centre, are found the Gulf of Guinea, the Bight of Benin, and the Bight of Biafra.

A westerly wind continually blows in the Gulf of Guinea, and a strong current sets into it, denominated the North African or Guinea current. These circumstances render navigation extremely dangerous, and have been the cause of numerous shipwrecks.

3. *In the Indian Ocean.*

On the southern and eastern coasts are Algoa Bay, Delagoa Bay, Sofala Bay, Mozambique Channel, and the Red Sea.

Algoa Bay, or Port Elizabeth, lies about 500 miles E. of Cape Town. It has a safe anchorage during six months of the year; but, when the south-east winds blow, the heavy seas which roll into it render it insecure.

Mozambique Channel is about 1000 miles in length, and varies in width from 250 to 500 miles. Numerous clusters of islands are found in the channel, and towards its northern extremity are the Comoro Islands. These tend to obstruct the navigation.

The Red Sea is entered by the Strait of Bab-el Mandeb, the Gate of Tears, which is eighteen miles in width.

The Red Sea separates Arabia from Abyssinia, Nubia, and Egypt. It is about 1400 miles in length, and, at its northern extremity is divided into the Gulfs of Akaba and Suez. The latter is about 200 miles long, and the former about 100 miles in length. This sea has numerous rocky islets and hidden coral banks, which often impede the course of vessels. The coral reefs are more extensive and abundant than in any other body of water of equal size. Steamers regularly ply on this sea between Suez and India.

IV.—CAPES.

Cape Bon, in the Mediterranean, the most northern, is near Bizerta, Tunis; Cape Ceuta, or Cape of the Monkeys, opposite Gibraltar. This cape and the most southerly point of Spain were anciently called the Pillars of Hercules, and the boundaries of the world. Fable says that Hercules divided Europe from Africa, by breaking asunder the isthmus which joined them. Thus was formed the Strait of Gibraltar.

Cape Verde, meaning green, is the most western point. The Portuguese are said to have given it this name, because the sea, for thousands of miles around, presented the appearance of an immense meadow, being covered with sea-weed. Others say that it derives its name from the boabab of Senegal, a tree which attains an elevation of fifty or sixty feet. The top has the shape of an umbrella, and a number of these together, when seen from a distance, present the appearance of a green field.

Cape of Good Hope. This promontory was, when discovered, called the Cape of Storms. Bartholemew Diaz, a Portuguese navigator, was the first to double it; and, on account of the stormy weather he encountered, he gave it the name of the Stormy Cape. King John of Portugal called it, however, by the name of the Cape of Good Hope, because he now hoped to be able to reach India by sailing around Africa. This was done by Vasco de Gama, three years afterwards, who reached Calicut, in the East Indies, in 1496.

Cape Aguehas is the most southern point in Africa; while Cape Guardafui is the most western in the peninsula. On looking at the map, it will be seen that the four principal capes are turned towards the cardinal points: Bon, in the north; Verde, in the west; Aguehas, in the south; and Guardafui, in the west.

V.—Physical Aspect and Mountain Chains.

Africa may be considered as consisting of two parts—a high country and a low. An extensive table-land occupies the whole of Southern Africa, and extends even to some degrees north of the equator. The table-land of central Africa consists of elevated terraces, which rise from the shores on either hand, and with the high land of Barca and the districts around the Atlas mountains in the north, occupy an area twice as large as the whole continent of Europe. The greater part of Northern Africa is an immense plain.

1. The Atlas Mountains. This mountain system extends in a curve, from the S.W. to the N.E., along the north-west of Africa, from the shores of the Atlantic, near Cape Nun, to the Gulf of Cabes in the Mediterranean. It has a length of more than 1200 geographical miles, and encloses all the high lands of Morocco, Algiers, and Tunis. Like all the African mountains, Atlas is composed of several parallel chains, which rise the one above the other, and enclose between them plateaux, or table-lands. The principal range, called the Greater Atlas, extends to the boundary between Morocco and Algiers; while to the east of this it is denominated the Lesser or Little Atlas. The chain of the Greater Atlas separates Northern Africa from the Desert, and forms in Morocco a mountain knot, perpetually covered with snow, which has an elevation of 13,000 feet. Fable says, that in this region Atlas, one of the Titans, was placed, and compelled to bear the heavens on his shoulders. The Atlantic Ocean derives its name from this celebrated system of mountains.

2. The Kong Mountains. On the borders of Senegambia and Guinea is a table-land, which throws out mountain ranges on all sides, forming the watersheds between the basins of several remarkable rivers. To the range that passes eastward, parallel to the Gulf of Guinea, is given the name of the Kong Mountains. Its length is unknown; but it is supposed to terminate on the banks of the Niger.

3. The Cameroon Mountains. This chain lies along the Bight of Biafra, and, in its highest point, attains an elevation of 13,000 feet

above the sea. This mountain mass is supposed to be the western extremity of an immense range, which is said to cross Africa from west to east, about 5° to the N. of the equator. This uninterrupted mountain zone, as laid down in maps, is called Djebel Kumri, or the Mountains of the Moon.

Of the existence of this chain there seems little doubt; but we know nothing of its extent, its general direction, or its distance from the equator.

4. The Abyssinian Mountains. Abyssinia is an elevated table-land, the north-eastern edge of which is directed towards the Red Sea, while the other edges slope inland to a lower level on every side. This table-land, from 7000 to 8000 feet above the sea, is separated into two portions by a mountainous region in the centre of the country. Abba Jareb, the most elevated mountain, is 15,000 feet in height. This Alpine territory is well supplied with water, which has the effect of rendering the country very fertile. The plateau, at its southern extremity, passes into the Mountains of the Moon. The plateau of Abyssinia and that of Senegambia, placed at the two extremities of the greatest width of continent, present very remarkable analogies in the disposition of their terraces, and the nature and products of their soil: they are also the source of the two largest African rivers—the Nile and the Niger; the first flowing from the S. W. to the N. E., and the second from the N. W. to the S. E.

5. The Mountains of Congo. Southern Africa is bounded west and east by two chains of mountains which run parallel to the sea coast. The former is called the Mountains of Congo, or the Western African Mountains; and the latter, the Eastern African Mountains, the Chain of Lupata, or the Back-bone of the World. These two chains seem to form the declivities of the table-land of Central Africa.

6. From Cape Lopez to Cape Negro, on the western coast, the land curves inwards, and is generally called Lower Guinea. It seems to be composed of several terraces: the upper one is unknown to us, and, in all likelihood, barren; whereas the lower one is fertile, cultivated, and thickly peopled.

7. To the south of Cape Negro, a distance of more than 10°, stretches a coast the most arid and barren on the globe. It is without trees, without water, and without inhabitants.

8. South of the Fish River is the plateau of the Hottentots, from which, on all sides, rise unknown mountains or rather mountain terraces, between which stretch the Karroos, plains devoid of water, but which, in the rainy season, are covered with the richest verdure. This plateau is bounded on the south principally by the Nieuwveld range of Mountains; some of its summits have an elevation of 10,000 feet.

9. The table-land of Cape Colony forms a succession of terraces rising from the south to the north. The first terrace runs parallel to the southern shore, and is enclosed on the north by the Zwartze Berge, or Black Mountains, which rise 4000 feet above the sea. North of this range is the elevated group already mentioned, the Nieuwveld Mountains; and further eastward the Sneuwbergen, or Snow Mountains. Some of the principal summits are Compass Berg, a snowy

hill 7500 feet high; and Sable Mountains, near Cape Town, 3582 feet. Between the Black and Snow Mountains is a raised plain of clay covered with sand, called the Great Karroo. It is about 100 miles wide and 300 miles in length. The Karroos are not deserts, although they are destitute of running water. The soil, which is about two feet deep, rests upon a solid rock; this, in summer, is quite burnt up by the heat of the sun, vegetation disappears, and the surface is covered with a black dust, the remains of dried-up vegetables. When the rainy season comes, vegetation suddenly springs up, and the plain is covered with the richest pastures. The cattle are now led hither by the colonists to feed in these fertile plains.

10. The Lupata Mountains are said to extend from 6° to 26° S. latitude. The direction of this chain is north and south, with occasional bends alternately to the east and west. As it advances southwards it approaches closer to the sea-coast. It is thought to be connected with the elevated parts of the earth's surface on the north side of the equator (or with the Abyssinian Mountains), by the Mountains of the Moon.*

VI.—PLAINS AND DESERTS.

1. The whole of the land lying between the Kong Mountains, the Mountains of the Moon, Nubia and Egypt, and the Barbary states, consists of a great plain, which may be divided into two regions—a fertile and a sterile: the former called Soudan, and the latter Sahara. Soudan lies to the south of the Sahara, and extends eastwards from Senegambia to the western branch of the Nile. The portions adjoining the Sahara are supposed to have an elevation of 1000 feet above the sea.

2. The Sahara,† or the Great Desert, extends from the Atlantic Ocean on the west, to Egypt and Nubia on the east. Its length is nearly 3000 miles; its breadth, in its widest part, is 1200 miles; and its area is calculated to be 2,500,000 square miles—which is three times that of the Mediterranean Sea, and more than two-thirds of the area of Europe. The surface is, in general, covered with sand: in some places it consists of hard clay, and in others of barren rocks. The sand is sometimes violently agitated by the winds, to the great fear and danger of those who cross these wastes. Neither dew nor rain bathes these desolate regions; for heated columns of air, everywhere ascending, dissolve the vapours, and disperse each swiftly vanishing cloud. With the exception of certain fertile spots, called Oases, the Desert must be regarded as uninhabitable by man. In the eastern part the Oases are of considerable extent; but in others they are only large enough to contain one or two villages, which serve as resting-places to the caravans crossing the Desert. By means of these a regular trade is carried on between the countries north and south of the Desert. These caravans, consisting generally of from 200 to 500 persons, and double or triple that number of camels, occasionally suffer from the want of water, the hot winds, and the moving pillars of sand. In 1805,

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* Humboldt.

† The full name is *Sahara-bala-ma*, "the Desert without water:" sometimes called *Bahar-bela-ma*, "the Ocean without water."

one, which consisted of 1800 camels and 200 men, perished when crossing the western part of the Desert.

Some portions of the Desert are below the level of the Mediterranean; and many believe that it is the dry bed of a sea, which some great convulsion has made to disappear. The extraordinary quantity of salt which it contains strengthens this opinion. The salt zone of Sahara is believed to be connected with the beds or deposits of rock-salt of Sicily and Palestine. Some portions of this great plain are impregnated with salt, and there are spots which are so incrusted with this substance as to appear to have a slight covering of ice. The Oases bordering on Egypt were used as places of banishment in the later times of the Cæsars. Malefactors were sent to these islands in the sea of sand, just as we send criminals to Norfolk Island and the Bermudas. Escape by the ocean is almost easier than through the Desert.*

The principal caravan routes are from Tafilet, in Morocco, to Timbuctoo; and from Moorzouk, in Fezzan, to Bornou, near Lake Tchad. The merchants bring from Soudan gold, ivory, ostrich feathers, and slaves. Salt is an important article of import to the countries bordering on the south of the Sahara.

SPECIMENS OF PARSING AND PARAPHRASING.

NO. XV.

[The words printed in italics, in the following quotation from Herbert's "Church Porch," are distinguished as words for parsing.]

On Conversation.

If thou be master-gunner, spend not all
  That thou canst speak, at *once*; but husband it,
And give men turns of speech: do not forestall
  By lavishness thine own and others' wit,
    As if thou madest thy will: a civil guest
    Will no more talk all, than *eat* all, the *feast*.

Be calm in arguing; for fierceness makes
  Error a *fault*, and truth discourtesy.
Why should I feel another man's mistake,
  More than his sickness or his poverty?
    In love, I should; but anger is not love,
    Nor wisdom, *neither*; therefore gently move.

Calmness is great advantage: he that lets
  Another *chafe*, may warm him at his fire,
Mark all his wanderings, and enjoy his frets,
  As cunning fencers suffer heat to tire.

* * * *

Mark what another says; for many are
  Full of themselves, and answer their own notion:
Take all into thee, then, with equal care,
  Balance each dram of reason, *like* a potion:
    If truth be with thy friend, be with them *both*,
    Share in the conquest, and confess a troth.

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* Humboldt.

PARSING.

That, rel. pron. obj. gov. by *speak*.
Once, adv. used as a noun, obj. gov. by *at;* the preposition phrase *at once* is equivalent to an adverb modifying *spend*.
As, conjunctive or relative adv., connecting the preceding clause with the implied clause "thou wouldest do."
Eat, infinitive to the auxiliary *will*.
Feast, noun, obj. gov. by *during* understood, and again by *eat*.
Fault, noun, obj. attributed by the verb *makes* as an apposition noun to *error*.
Neither, definitive adjective, defining *thing* implied.
Chafe, infinitive, gov. by *lets*.
Mark, verb trans. gov. the expression "what another says."
What, rel. pron. obj. gov. by *says*.
Like, adj. used as a conjunction.
Both, definitive adjective, defining *them*.

PARAPHRASE.

If your ability in conversation surpasses that of others, do not utter at once all that you could say, but deal out your speech thriftily, and give others an opportunity of speaking. Do not, as if you were making your will, preclude by profuse talk the expression of other men's judgments, and the better exercise and effect of your own. A polite guest would not refuse to others a part in conversation, any more than he would exclude them from sharing in the repast.

Be cool and reasonable in argument; for violence in debate makes error in judgment sinful, and truth itself an incivility. Why should I feel vexed by another man's mistake, more than by his sickness or his poverty? In the temper of charity, indeed, I should be moved by the state of his mind; but anger is both uncharitable and injudicious: therefore, in the progress of an argument, be uniformly temperate and mild.

Calmness is an excellent vantage-ground: he that leaves the heat of anger to be indulged by his opponent, may turn to his own advantage such unguarded transport, and, as it were, warm himself at his adversary's fire: he may observe all his deviations, and find comfort in his fretfulness, by acting as cunning fencers do, when they allow an antagonist to tire himself by superfluous exertion.

Mark attentively what is said by another; for many are so full of themselves, that they answer, not the arguments of an opponent, but the preconceived notions of their own minds. Take then into your mind with impartiality all that is advanced; weigh, as with the accuracy of a dispensing chemist, every reason that is urged. If you find truth to be on your friend's side, be you on the side of truth along with him; and thus, though forced to abandon your opinion, share in the conquest won by truth, and confess a mutual consent.

SCHEME FOR THE ESTABLISHMENT OF A COLONIAL COLLEGE.

It is proposed that this College shall consist of two departments:—

One for boys of all ages, from seven to seventeen; and

One for young men above the age of seventeen.

Both departments to be under the immediate government of the Warden, Fellows, and Tutors, subject to the ordinary power of the Bishop as Visitor.

I.—Public School Department.

1. The Lower Department will be established on the plan of the great Grammar Schools of England, both as to instruction and discipline. It will be designed to provide an efficient course of education for youth, comprising religious and moral instruction, in strict conformity with the doctrine and discipline of the Established Church of England; the Greek, Latin, and Modern Languages and Literature; Mathematics; English History; Physical, Descriptive, and Political Geography; and such other branches of knowledge, and such accomplishments, as it may be practicable and advantageous to introduce.

2. Every boy will be expected to learn the French Language.

3. Simple Lectures will be delivered, from time to time, on the elements of Botany, Chemistry, and Natural Philosophy; and the older boys will be encouraged to learn to experiment for themselves in the laboratory, and to construct such simple apparatus as may enable them to pursue their researches when deprived of the use of scientific instruments.

4. The foundation of Scholarships, as rewards to successful talent and industry in the Public School department, and to be held in the Collegiate department, is contemplated as necessary to the success of both institutions. Also, Bourses or Exhibitions to the lower school may be founded. It is intended that these shall be perpetually called by the names of the founders. Such foundations will be a suitable mode of providing obituary memorials of the fathers and founders of the settlement; and it is suggested that they would offer to individuals a desirable means of identifying the names of persons or places which they may wish to commemorate, with a colonial object of enduring interest and importance.

5. Two Examinations, partly written and partly oral, shall be held every year.

6. Model, Landscape, and Figure Drawing, &c. &c., and Vocal Music, especially that which will enable them to take part in public worship, will be taught to all the scholars.

II.—Collegiate, or Upper Department.

It is intended that—

1. This department shall comprise four divisions:—
    1. Theological;
    2. Classical;
    3. Mathematical, and of Civil Engineering;
    4. Agricultural.

2. The Theological division will be confined (with the exception of a few general lectures) to the candidates for Holy Orders, who will be expected to attain to the standard of theological knowledge required by the English bishops before presenting themselves for examination for orders. They will also be expected to teach at least one hour in every day in the central primary schools of the city.

3. The Classical division will, as a general rule, include all the students.

4. In the Civil Engineering division, it is hoped to give an elementary course of instruction in Physics and Industrial Mechanics, especially such as are applicable to the wants and capabilities of a new country. The practical application of the mechanical powers—the strength of materials, especially of the stone and woods of the country—the construction of roofs, bridges, canals, locks, wind-mills, water-mills, &c. &c.—the theory of warming, lighting, and ventilation, &c.—will form the chief studies in this department. The visitor hopes to secure the immediate services of an experienced practical modeller, who will be able to enrich the Museum of this department with examples of various kinds of construction. Carpenters' tools, lathes, and a forge will be attached to the workshops.

5. In a country which derives its main wealth from agricultural produce, it will be obviously desirable to introduce an agricultural element in any scheme of higher public instruction. It is not intended that such a course shall be compulsory; but the visitor will not rest satisfied until those gentlemen, members of the College, who do not intend to enter any of the learned professions, shall have the opportunity of varying their studies in language and abstract science, by watching the processes of practical agriculture adapted to the climate and soil of ———— ; learning, at least, the elements of farriery, botany, and of agricultural chemistry (including rotation of crops, grafting, budding, &c.); of aiding with their own hands in tending cattle, and in working a small farm of arable land; and also of studying such elements of medicine and surgery as will enable them to act in cases of emergency.

6. It is proposed that an ample supply of apparatus should be provided for both departments, and that the buildings should be arranged and fitted up according to the best examples in England and on the Continent of Europe. It is expected that all boys in the lower department will wear a simple and uniform costume. Caps and gowns will be worn by the students in the upper department.

7. Donations of Standard Books, Scientific Apparatus, Musical Instruments, Maps, Globes, &c. &c., are *most earnestly* solicited.

8. All the persons connected with the College will assemble for Divine Worship in the chapel twice a day.

9. Day scholars as well as boarders will be admitted in both departments.

10. The Visitor invites gentlemen proposing to send their sons to the Colony, and who may be desirous of placing them in such an Institution as is here described, to enter into confidential communication with him.

11. The Visitor intends at first to act provisionally as Warden.

12. A moderate scale of fees will be established for both departments,

as soon as it is known what sums may be expected as an endowment of the College, from other sources than the payments of the pupils.

13. Designs for the Collegiate buildings, of a plain but suitable character, to be constructed of wood in the late pointed style of architecture, and with due regard to the danger of fire, are in course of preparation under the immediate superintendence of the Visitor. They may require, hereafter, some modifications according to the nature of the site which they are to occupy. They will be forthwith lithographed, and privately circulated among the friends and founders of the Colony.

14. It will not, for some time, be possible to publish a list of the professorships and offices of the College which may be necessary for the proper working of it. These must in a great measure depend upon the endowments.

The above appears a sufficient outline of the character of the proposed College. The best practical security for its satisfactory establishment and working, especially as regards the religious instruction and the general discipline, should be looked for in the constitution of the governing body to whom its administration is to be confided.

IDEAS ON PHYSICAL GEOGRAPHY.

(*Continued from page* 158.)

CHAPTER XXX.

491. We must not imagine that at any given epoch we can confer any constitution we may choose upon a people, or subject many provinces to the same authority. Previous dispositions are necessary.

There must be roads, means of transport and commercial interchange.

Charlemagne succeeded in subjugating divers groups of people, but he failed to make them one nation. Ages were necessary for that. One language must be established, at least among the higher classes of society; the minor colonies or groups must renounce their individuality, and become subservient; the aristocracy of each community must consent to assimilate with the new masters. There must be a satisfactory conjunction between the aristocracies. At the same time, the mode of conducting the administration must be known, as well as the local and corporate interests. The appointment of a police must be practicable. All the aristocracies must have one common centre of relations; and live together, at least during a portion of the year.

492. If a Burgundian of the middle ages were to return upon earth, he would accuse his fellow-citizens of having suffered the country to perish; he would wish to reanimate a war, which he would call national and patriotic, and to which we should affix the odious name of civil war.

The word native land, then, extends its signification in proportion as states become more extended.

The rivalry which at the present day would be criminal, not long ago was public virtue, and patriotism.

493. As a body oscillates before falling into the settled position, so does a country oscillate between unity and wisdom into petty states, according to the more or less knowledge and political virtue which are found in the country.

In the present day, frontiers are effaced, animosities become extinguished, pretensions modified, industry increases, manners intermingle, and, if war be excited, it will only tend to hasten the fusion of peoples.

CHAPTER XXXI.

494. Flocks, negotiable objects, industry, arts, trades, commerce, are constituent elements in the existence of a people.

495. Territorial property is one of the constituent elements of a state.

496. The possession of land and the nature of the tenure, are really the basis of divers political constitutions, and have a powerful influence upon the fate of men.

497. To render the soil a common merchandise, is to produce a revolution.

The French Revolution, one of the principal effects of which was the free acquisition of land, was conveyed to France from the United States of America—from those men to whom a space was denied upon the vast uncultivated soil of old Europe; it was also conveyed to France from Holland and Italy.

France has, with regard to landed property, laws and rights similar to those of the Romans during their decline.

498. The nature of the tenure constitutes the basis of the right of every nation, especially of the German people and the English.

To the eyes of old Europe, France is really in revolution, until landed property shall be otherwise regulated.

The manner of possessing—the nature and tenure of land, is essentially connected with marriage, with legislation, and with government.

England has large proprietaries and commerce, which are the basis of its constitution.

499. Owing to the people of the North neither possessing nor obtaining anything, even land, except by force, all their ideas of domination are transformed to the one idea of possession.

With the man of the North, to govern is to possess; to vanquish, is to acquire.

500. That a prince may rule different people is a fact which tends to establish the truth that the prince possesses the people as well as the soil.

504. To impede those who have nothing from legitimately acquiring, is to constrain them to take by main force.

It is curious to see what laws have predominated in France, with respect to the alienation of noble lands; and nearly all were lands pertaining to the nobility.

It is curious to see how and under what conditions the unfair purchaser was obliged to restore the land he had bought.

505. It is very important to know if the purchase of land is permitted in a country by the laws or manners; if, in short, it be a general custom.

506. Wherever the acquisition or purchase of land is not easily effected, the proprietors of the soil are the only real chiefs, and omnipotent. What is the fate of the non-proprietors?

They suffer, and, after a time, they in their turn become wanderers from home. Example: The French of 1793, and the Poles of 1830. But we do not see that it may be the nature of the tenure of the land, which has caused the misfortunes of the Poles. There are so many truths which we do not see, which we even repel.

Is it not the want of maritime banks, and the geographical state of Poland, which has caused many of the frightful and perpetual miseries of its people?

507. Wherever and whenever the acquisition of land is difficult, commerce is resorted to by all energetic men.

But men of central lands have no resources but in exile or revolt.

German princes sell their land. This is a very important fact.

Are the links between proprietaries and principalities about to be broken?

Will this great and unobserved event take place in our day?

508. Is the proprietor, who has fifty tenant-farmers on the same land, a prince?

Such considerations have much influence upon the history of provinces.

A petty German prince is driven from his states: is he a dispossessed proprietor?

509. The manner in which the opinion as to the possession of a territory is transformed, in proportion as that land becomes greater, has an influence upon the lot of petty principalities, and of great states.

510. The French aristocracy, to preserve intact the manorial power, established the right of primogeniture.

Even in the present day, it is generally believed that the right of primogeniture perpetuates the possession and the power.

This right has contributed to dispossess the proprietors.

511. It often happens that men expect from established causes certain effects contrary to those which ought to be the result.

We do not see, still less do we foresee.

CHAPTER XXXII.

512. It is difficult for a man to secure to himself a large proprietary in the mountains; at all points his position and even his prospect is contracted: a thousand accidents,—torrents, for example—prevent movement and communications. How can he say, *All is mine!* when many a nook may be in possession and under cultivation without his consent or knowledge?

513. The soil of mountains is divided into very small proprietaries.

The soil of mountains, then, is valued at a very high price.

In the mountains, man finds natural sheltering spots. A few perches suffice for a house; the walls and support of which are furnished by the flank of the mountain.

514. In the half-fertile plain, there is neither shelter, nor natural limit. Man has need of man: he must become submissive. Habitations are reared with difficulty. He who is able to raise a strong habitation may say, for a considerable distance round, *All is mine!* Once said, it holds good for a long time. These words repel population and culture.

515. Such is one of the causes which converts plains remote from mountains into solitudes termed barren, although frequently they only need cultivators.

They long remain useless, are valued at a low price, but few proprietors wish to sell.

It is in France that certain districts contain whole populations living underground.

It is in flat countries, where it is expensive to raise a house, that the people are in extreme poverty.

516. It is in the rainy and cold climates that the greatest expense is necessary to establish a habitation in the plains.

517. In warm, dry climates, the plains are more populous, proportionably, than in cold and rainy climates.

CHAPTER XXXIII.

518. In isolated countries, unfrequented by strangers, unenlightened by an acquaintance with other countries, and from whence the exit is difficult, the domestic, and even the farmer, is constrained to dwell with his master. He becomes, in the real sense of the word, a slave.

And more, he is constrained to regard and to treat his servitude as a benefit received at the hands of the master.

Such is one of the effects consequent upon a difficulty of movement among men.

519. Thus, the failure of roads, of means of transport and of communication, establishes slavery *de facto.*

520. At all times and on every occasion, chiefs endeavour to confine the existence and the various relations of their men within narrow limits.

The facility of travelling and of corresponding is a great source of power and of useful knowledge.

523. Roads are insecure and imperfectly known in central lands.

Proprietors, neighbouring people, and bad roads impede emigration.

The discontented and unfortunate of central lands emigrate, then, with open violence, and in large bodies.

The difficulty of moving from place to place is, then, one of the causes of great historical emigrations.

CHAPTER XXXIV.

525. There are towns which neither rule nor obey.

526. There are towns which waver, according to the times, between domination, subservience, and independence : Lyons, Toulouse, Cracow, &c., &c.

527. The capital of a state is situated as near as possible to the most powerful neighbouring state or states. Some states have in reality several capitals.

528. There are few capitals which are not upon one of the great high-roads of nations.

529. A capital is at the intersection of roads from nation to nation ; it ought, then, in a country which is a great thoroughfare to have several capitals approximating to it. Example : Milan, Genoa, Turin, Parma, Venice, &c., &c.

530. A great state is formed, then, around a town which is situated in a great thoroughfare from nation to nation, but which has, in its environs, many isolated provinces which that town has the power of subjugating.

531. For a great state to be formed, a town, powerful by geographical laws, must have around it, in an extended radius, land basins, or semi-land-basins less powerful than the town itself, and which cannot be appropriated by another town.

532. The strength of a capital is often (all besides being equal) proportional to the strength of the land basin in which it is placed.

533. For a land basin to have its shore opposite to another shore, is one of the most powerful causes for its becoming a principal basin.

The basin of the Seine is towards the South, the last of those basins from the North the shore of which faces another shore.

It is one of the causes wherefore the Normans made a settlement there.

It is one of the causes wherefore the basin of the Seine rules over the other basins and bears a capital.

The basin of the Somme ought to be, and has been at the epoch of petty states, a principal basin.

The existence of the states of America will change the circumscriptions of the States of Europe, notably those of France.

The discovery of America has aggrandized Paris, Havre, Rouen, Nantes, Bordeaux.

The relations with America have contributed to the final expulsion of the English from the western shore of France, and have reattached, for a time, the people of that shore to the power of Paris.

534. A basin is as much less powerful as it is more isolated ; it is so much the more disposed to be made subject.

The basin of the Loire is too isolated to permit of its being a principal basin.

The basin of the Garonne has all the conditions for a principal basin, except that it is an inevitable thoroughfare, and as such too confined.

535. A basin, which was a principal basin at a time when petty states only were in existence, is subjugated at a later period by another.

This is another example of the necessity of giving to each principal its due measure : a principal basin ought to be upon a great high-road of nations ; but if there be not space enough for nations in their movement to pass round it, or if the passage be narrow or only that one, the basin will soon be subjugated.

536. There are, in Europe, many isthmuses which are but little noticed, and whose existence has much influence upon states; one along the Pyrenees, another from the mouth of the Rhône to that of the Rhine, another from Venice to the mouth of the Rhine, another from Venice to the mouth of the Vistula, another from the mouth of the Dnieper to the mouth of the Vistula, another from the mouth of the Don to the bottom of the gulf of Finland, another fom the Caspian Sea to Nova Zembla.

The fact of Poland being situated in an isthmus, is one of the causes of its downfall, but one of the causes only. The Po is in an isthmus: it is one of the reasons wherefore it has not formed a great state having its centre upon the banks of a river.

The isthmus is merely the shortest distance from two seas, or from two parts of a sea; the shortest distance from two sheets of navigable water.

537. A town guarded by natural defences, there being, at the same time, facility of communication, possesses, by that very circumstance, a great cause of prosperity and domination.

London is in that position.

538. Where a land-basin is very vast, and a very extensive course or sheet of water composes the bottom of it, there are formed, at certain times, integral states on each side of the running or stagnant sheet of water.

539. The greater or less facility of the navigation of a course or sheet of water has much influence on the lot of those towns which that water has caused to spring up.

541. A natural road common to many nations is a bond which links together the countries through which it passes, especially when that road is along watercourses: it often unites these countries under one power, but the form and the extent of the empire often vary.

542. (All things besides being equal) the basin of the north governs by force the basin of the south.

543. An alteration in the construction of vessels may prove prejudicial to a state.

If, for example, the draught required for ships is augmented, the river can no longer receive them except up to the same height as heretofore or even can no longer admit them at any point.

London has gained much by the enlargement of vessels; Paris, an d especially Spain and Portugal, have lost thereby.

Many northern states have also lost much from that circumstance.

LIST OF BOOKS SUITABLE FOR A BOYS' AND GIRLS' SCHOOL—180 SCHOLARS IN EACH.

		Boys.		Girls.	
Total.	Description of Books.	No.	Classes.	No.	Classes.
60	Holy Bible	30	1	30	1
60	New Testament	30	2	30	2
180	Common Prayer Books	90	1, 2, 3	90	1, 2, 3
120	Parables, Miracles, Discourses, &c. (G.P.C.K.)	60	4, 5	60	4, 5
60	The First Book (S.P.C.K.)	30	6	30	6
120	The Second Book ,,	60	4, 5	60	4, 5
120	The Third Book ,,	60	2, 3	60	2, 3
30	Reading Book for Female Schools	—	—	30	1
30	The Third Book (Irish)	30	1	—	—
60	Manual of English Grammar (M'Culloch)	30	1	30	1
120	Reid's Outlines ,,	60	2, 3	60	2, 3
120	Wilson's Outlines of Etymology	60	1, 2	60	1, 2
60	Cornwell's School Geography	30	1	30	1
60	Reid's Geography, or the Child's Geography, Hopwood	30	1	30	1
120	Paterson's Zoology (in pts.)	60	1, 2	60	1, 2
60	First Book of Arithmetic (Irish)	30	2	30	2
60	Hunter's Manual of ditto	30	1	30	1
60	History of England, No. 1 (S.P.C.K.)	30	1	30	1
60	Bp. Davy's ditto	30	2	30	2
30	Instructions in Household Matters	—	—	30	1
60	Spelling Book superseded	30	4	30	4
120	Arithmetical Tables	60	1, 2	60	1, 2
ad lib.	Church Catechism				
,,	Exposition of ditto				
60	M'Leod's Poetical (Pts. 1 and 2)	30	1, 2	30	1, 2

For the Pupil Teachers, &c.

No.	Description of Books.	Boys.	Girls.
12	Tate's Arithmetic	6	6
12	Arithmetical Questions (Pts. 1 and 2, M'Leod)	6	6
6	Thompson's Arithmetic	4	2
2	De Morgan's ditto	1	1
6	Colenso's Algebra (Pt. 1)	6	—
6	Treatise on Mensuration	6	—
6	Tate's Mechanics	6	—
6	M'Leod's Geography of Palestine	3	3
6	Sullivan's Geography	4	2
2	Wilhelm's Method of Singing	1	1
2	Reid's Dictionary	1	1
2	Latham's English Grammar	1	1
6	Hunter's ditto	3	3
3	Lardner's Mechanics	3	—
2	Recreations in Physical Geography	1	1
2	The World of Waters	1	1
8	Useful Hints to Labourers, &c. (Sets) (Parker)	4	4
8	The Useful Arts, &c. (Sets) (Parker)	4	4
6	Tate's Euclid	6	—
2	New General Atlas (or Cruchley's ditto)	1	1
2	Bible Atlas	1	1
1	Herschel's Astronomy	1	—
5	Hiley's English Composition	3	2

We shall be glad to receive any criticisms on this scheme.—Ed.

ON CATECHISING.

The great strength of the catechetical mode of teaching lies in the fact of its drawing out the mind and powers of the disciple, and leading himself to deduce truths on reflection, as well as to enunciate them. Men will always save themselves trouble if they can; they do so unconsciously; the tendency to relax exertions is mixed up with our nature throughout, and influences us frequently when we are not in the least degree aware of such being the case. This is true of our bodies —of our conscience, as well as of our intellectual powers; we know this is strangely true of our conscience; it will soon cease to warn us if not exerted, and it needs to be called to exert itself. People who substitute an external rule, and system of routine, for the voice of their own conscience, and do what they see done around them; who are just as virtuous, and no more, than the world—religious or secular—around them, and who attach themselves to an outward guide, instead of their own inward one, cease very much to feel the directions of the latter; they gradually lose the genuine native oracle of conscience. It is equally true in the intellectual world: the understanding is weakened, and the intellect impaired, by not being allowed to exert themselves on the subject-matter of their education. The powers of apprehension and attention are so enervated from being saved trouble, that they soon will cease to exist altogether. This is often the case so unconsciously to ourselves, that, although we wish most earnestly to call those intellectual powers into play, yet, if we are allowing ourselves to be the objects of direct instruction, which does not of necessity call out our mental powers, we shall find them increasingly unwilling, and ourselves surrendering the use of them. The perfection of our mental, as well as of our moral powers, consists in exertion. All this is in close analogy with the natural world. An organ or function of the body is absorbed, or paralyzed, or obliterated, if deprived of a healthy and life-giving opportunity of action. Work is the proper preservative of being, either physical, ethical, or intellectual.

The catechetical system unites all this. The subject-matter of instruction is first given by direct teaching, and the memory exerted upon it. It is then drawn out by questions, which require a process of thought in the mind of the disciple, calling out his own powers, and strengthening his intellectual faculties. A direct question involves a logical process in the mind. The child himself gives birth to the idea; he himself has formed into shape what he enunciates. The edge which he himself affords it, by exerting his intellectual powers to give it outline, presses keenly on him, and he feels its reality in the act of giving it birth. He receives his knowledge, in the first instance, in so modified a shape, that he does not see or understand its separate parts or tendencies. In answer to a question, he must place the truth in some defined idea; he must discover the aptness of the answer to the particular point in view, and whether the exact portion of the general truth floating in his mind is that which answers to the question. To do this, he must abstract, generalize, and divide. He has then formed his idea; this is one step towards definition, and in doing this he has ranged over the whole surface of his knowledge on this point, has discovered its different bearings, and has got it into shape; the general diffused body of light has become a focus; the floating sounds have formed themselves into a distinct tune. The expression by words becomes the next step in the history of definition. The approval of his answer, or the contrary, becomes a third step. So, by degrees, he strikes out for himself, and from himself, a clear view on one given subject, which he has gathered and taken out from a large floating subject-matter, and upon which he has been compelled to exert his intellectual powers. He has been led to see what to lay hold of as important in the knowledge he possesses, and how he can apply it to some practical detail. Truth becomes *objective* to himself, and that by his own power. He has painted a picture on his own mind, and has become acquainted with its form. He arranges facts under principles, or gives them a certain connection with other facts, which he would never have done otherwise. He may have been long convinced of a fact, but it rested without point in his mind, scarcely recognised. On a question being asked with reference to it, he discovers the fact, lays hold of it, and classes it under a certain arrangement. It is one of a class, or it is connected with, and finds its place under a certain principle; and the being led to classify the fact leads him to a clearer knowledge of it, enables him to understand it, and gives it a definite relation in the world of things, which it never had before. This process assists the memory, defines his own notions, and strengthens his intellect. He knows where he is. It is a logical process, and unconsciously he has become a logician. Take a case: a child is aware of the bare fact of Elijah being a prophet; *i. e.* the term prophet is attached in his mind to the name of Elijah. But the notion is indefinite. He is asked what Elijah was, and he immediately is led to summon to his mind the class of persons called prophets, to consider what they were, to see the point in which Elijah resembled the class, and to state the fact of his resemblance. A child is aware of the fact of Herod being a cruel man, but the notion is indefinite—is floating. When asked what kind of person Herod was, he calls to mind his acts; he tries them by some standard of what a person placed in Herod's position should be; he gets the notion of his falling below the mark, and, when tried by other cases, he finds that it is in the point of mercy that he fails. Herod is a cruel man; he all along *knew* this; he would have told you so if he had been asked, but he did not understand what he meant till it was drawn out of him.

Contrast the condition of the child's mind who has reached this end for himself, with that of one who is barely told of the fact, and in whose mind the fact is barely left. It is evident how far more clear, distinct, and applicable to practice, instances of knowledge must be which have been the subject-matter of a mental operation of this kind, than those which merely lie like objects floating on a surface, upon which they make no impression, and on which they bear with no weight.

Let us conceive this mode carried out into the detail of all Christian truths. Conceive each truth known to the child, arranged under some class of ideas and principles; conceive this done at the moment; and we shall soon see the power of the catechetical system, in strengthening the understanding and laying hold of the memory. Every article of the Creed, when placed in the form of a question, gives an opportunity of calling to mind, and investigating the whole train of moral principles. Every fact of Holy Scripture does the same. Catechetical instruction becomes a constant compulsion to the child to have recourse to the treasure-house of its knowledge, to bring out instances which are to be tried one with another, rejected if they do not agree; in which work the judgment is called into play, and is strengthened itself by weighing the fitness of facts with principles.

Catechetical instruction teaches method and arrangement; lets the disciple know where he is, and where his knowledge is; reproduces from given subject-matter; strikes out new relations of truth; becomes a kind of myrioramic picture, suggesting new views by a re-arrangement of existing data. What, in fact, the study of languages and moral philosophy does for us, catechetical instruction does for the poor. The examination of the structure of languages, the carrying on this work involved in all the difficulty attending a dead language, the close attention to verbal technicalities, the constant exercise of powers of generalization and abstraction, and the comparison of similar and dissimilar parts in words and grammar; these draw out, discipline, strengthen, render keen our faculties, in much the same way as catechetical instruction does the powers of those whose position cuts them off from the above method of education.

One important feature in catechetical teaching is its elementary character. The best means of gaining knowledge is, after all, by dwelling on simple elementary truths; working them thoroughly into the mind, and developing their own native substance and inherent riches. On this plan the learner will actually gain more knowledge than if he placed directly before him, as an object, the different points of knowledge he wished to make his own. Kindred facts gather round one given fact like flakes to a rolling snow-ball, and the attention, by being fixed on one point only, gains a strength and keenness it would lose in diffusion: *e.g.* A man wishes to gain a knowledge of the facts of Church history in order to apply them to the construction of principles; he finds an immense space to wander over, which discourages his own energy, and weakens his attention by its vastness and apparent want of connection. Church doctrine, struggles with the state, the condition of branches of the Church elsewhere, lives of her saints, and countless other points rise up before him in the field of inquiry, and he becomes bewildered.

Let such a man satisfy himself with laying hold of one single life of a ruler or saint of the Church in one given epoch of her history, let him consciously and directly give his sole attention to this one point, determining to get it up thoroughly, to study it in all its bearings and relations, to see it in contrast with all collateral facts, bringing to bear his attention in full intensity on this one object, seizing the quivering, vibrating feelers of historic truth with the firm forceps of a single-eyed attention, and he will have acquired more actual knowledge of Church history, more insight into the relations of things with regard to her, more power to form true principles about her in the study of the one life, than he would have done had he spent double the time in wandering over the plain of centuries. He will have definite points to guide his mind's eye; he will be looking down a vista of close rocks which bound the ray of his mental vision, as to one star at the end, and the ray of that star will gradually strike out the minutest points among the objects which surround him, which he would never otherwise have descried; while, on the other hand, if he took his stand upon a summit from which his eye would have no given resting-place, he would lose in distinctness what he gained in space, and he would come away with an imperfect knowledge of every object. Each fact, each period, each point in history has a thousand objects passing over it continually in faint and dim shadows, which, rolling in rapid succession, require to be closely watched, and then will come out in brighter and brighter colours, and more and more defined outline, till the surface, however small, becomes to us the camera obscura of revolving centuries. Meanwhile our powers are in repose, from having but one point to be consciously studying.—*Extracted from "Parochial Work," by the Rev. E. Monro, Incumbent of Harrow Weald.*

Correspondence.

(The Editor begs to state distinctly that he is not answerable for the opinions of his Correspondents.)

BOARDING SCHOOLS FOR POOR GIRLS.

LETTER IV.

MY DEAR FRIEND,—The second and perhaps still more important object I have in view, is that of giving a Church education to the daughters of farmers, tradespeople, &c., who are naturally averse to sending their children to the National Schools, cannot afford to send them to those kept by ladies, and consequently educate them at inferior schools kept by persons in their own rank of life. This would seem a natural proceeding, and, if the teachers were well-educated churchwomen, nothing could be more desirable; but, alas! two-thirds of the middle classes in England are dissenters, and nearly all are superficially educated: these facts I assert fearlessly, being certain that any person acquainted with them will corroborate my assertions.

I will, however, give a proof of my statement, by describing a young person at present in my school. I will call her Julia Smith, though she very much prefers the title of Miss Smith, and is still a little inclined to quarrel with the rule by which the girls in the house are called by their Christian name, in order to remind them of their Christian calling. Julia had heard of my school in a distant county, and conceived a strong desire to become my pupil, in spite of the disadvantage, as she considered it, of occasionally mixing with girls of a lower rank of life than herself. I hesitated to receive her, finding she was nineteen years of age, but consented to do so at her repeated desire. Accordingly she arrived; unfortunately on a Wednesday during Lent. The dinner consisted of pudding only, which she absolutely refused to eat, alleging she could not dine on such fare, nor could she eat brown bread, nor indeed would she remain many hours in the house. When I arrived, I found my new pupil in tears; and, on inquiring the cause, heard a long list of complaints ending with the assertion that she could not and would not stay: to which I replied, that her staying did not depend entirely on herself; that, unless she changed her conduct, she should not stay, as I would not allow her to remain. This seemed a new view of the case, which rather startled her—meantime I begged to examine her acquirements, and found she was absolutely ignorant of grammar, history, and geography: she could not spell correctly; she did not know the situation of her native place; and had never heard of the Reformation, or of William the Conqueror. Of course she could not pronounce the letter H, or misapplied it; but she could dance the Polka, and play a few waltzes.

She was more ignorant than most of the little girls in my school—a fact I pointed out to her, after listening to her complaints and disappointment for two hours—and then asked her whether she had not sufficient good sense to submit to temporary annoyances and inconveniences (if such they were) for the sake of permanent advantages.

I expatiated on the superiority of well-educated women in all situations and ranks of life, and entreated her, for her own sake, not to throw away the opportunity she now had of acquiring information, which would enable her to adorn the station in life to which God had called her, or to earn her own livelihood as a teacher of young children, should circumstances compel her to maintain herself—an event by no means unlikely to happen to one of ten children of a farmer, in these bad times.

With regard to the mixture of classes, I assured her that the kindness and consideration I expected her to show to those below her in rank were no more than the exercise of Christianity required. I did not ask her to make them her friends, or to associate with them in times of recreation, or even of study; but to join them at meals, as members of the same Christian household—in prayer, as members of one Christian family—to receive religious instruction with them as having the same lesson to learn from the same master, and occasionally to be examined with those of similar acquirement and intellectual capabilities as herself. Perhaps you will agree with Miss Smith in thinking this a little hard; but you will also agree with me, that the plan is calculated to correct the faults of her character and class. Pride of station, and consequent small-mindedness—even to substitute pride of intellect—were a gain to such a character; but to teach her to look upon these despised ones as her equals, perhaps superiors in God's sight, entitled to her love and sympathy, would raise her in the scale of creation. If it be true, that the strength of England consists of her middle classes—and if it be true, that this is a fair specimen of those middle classes—there is surely something "rotten in the state of Denmark," when superficial knowledge alone is cultivated—when the wives and daughters of our farmers and tradesmen can dance and sing, and cannot read and write. Is not such an education opposed to the common sense, supposed to be a characteristic of English people? Above all, is it not subversive of that temper of mind, the spirit of the Church of England, which is the strength and stability of our times?

Yours, &c.,
M. S. R.

Notices of Books.

CONSTRUCTIVE EXERCISES FOR TEACHING THE ELEMENTS OF THE LATIN LANGUAGE ON A SYSTEM OF ANALYSIS AND SYNTHESIS, WITH LATIN READING LESSONS AND COPIOUS VOCABULARIES. BY JOHN ROBSON, B. A., LONDON. SECOND EDITION, REVISED. (London: *Taylor, Walton, and Maberly.*)

Mr. Robson's preface to his first edition explains the object of his exercise book, which "is intended for the use of those who have no previous knowledge of the Latin language, and may be used by itself, as it contains all that is necessary to enable the pupil to translate the exercises without the aid of grammar or dictionary." The design is simple and clear. The author proposes to teach the elementary part of the Latin language—that is, the forms of words and the construction of easy sentences—by the method of writing exercises, and without perplexing boys with a dictionary, or making their parents pay for one. The knowledge which a boy will thus acquire will enable him to commence the reading of a Latin author—Cæsar, for instance. Now, if we suppose it to be agreed that, in order to learn the Latin language well, a boy must study Latin authors under a good teacher—and it will hardly be disputed that this is the way to learn Latin well,—it only remains to see if Mr. Robson's plan is better than others that are practised. It should be added that Mr. Robson's work "is based on what is called the crude-form system," on which system we have now an excellent Latin grammar by Professor Key.

Some short, cheap, and easy method is wanted for acquiring so much of the Latin language as will enable a boy to commence the study of Latin authors; for, when the study of Latin authors has been commenced, all that remains to be done is to study them well under good teachers, and to rely on this study, combined with a system of exercises on Roger Ascham's plan, for the acquisition of a competent knowledge of the language * and a facility in reading it and in rendering English into Latin. It is true that, even if we suppose a boy to have acquired the power of commencing the study of Latin authors, either upon Mr. Robson's plan or any other, he is still exposed to a host of enemies who threaten to obstruct his progress under the pretence of helping him. These enemies are the innumerable so-called helps and aids in the shape of exercise books and other books, which ignorant and lazy teachers make parents believe to be necessary for the purpose. But we tell parents that they are not necessary, and that they are great hinderances. The study of Latin must decline in this country, and indeed at present it is rather upheld as a fashion than for any other reason, unless boys can learn more than they do, and unless the expense of books is diminished. If such a formidable list of books as we often see paraded before us is necessary for the learning of Latin, how was the language learned when these aids did not exist? and we know that it was learned in former days well and speedily. With the great progress that has been made in philological knowledge in modern times, and the greater means at our command, we ought to learn Latin well in less time than formerly: but we do not. That is a fact which will not be disputed by any man who is acquainted with the literary history of Europe in a tolerable degree.

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* This system is explained in the preface to an edition of Cicero, De Senectute, and De Amicitia, &c., published by Whittaker and Co., and Bell, London, 1850.

We want good methods and good teachers. A good teacher will not long follow a bad method. He will find out some way of doing what he professes to do. A bad teacher clings to books and helps, and the more, if he makes a profit by furnishing them to his pupils. Let parents look to this. Many teachers are booksellers in disguise. It is not all teachers who deserve this imputation; but many do. Those who are innocent will not object to this censure. As to those who are guilty, we care not for them and for what they may say. A teacher should be well paid—better paid for his teaching than he is at present; but we would have him make no indirect gains, nor load his pupils with bad books because he has a profit on them. If teachers had no profit on books, they would use fewer books in the elementary part of education, and the money thus saved might be expended in better ways. Instead of filling a boy's bag with what is of no use at any time, and is not considered to be of any use after he has done with it, one would rather see the expenditure on books strictly economized in the early years of instruction; and, when the boy grows bigger, he should now and then have a good and handsome edition of a classical author given him, a good set of maps, some valuable book of reference—something that he would be glad to take home and keep. On the whole, he might spend as much on books in his whole school career, but it would be spent profitably, and there would be something to show for it.

This is not a light matter. The reform of our Latin teaching requires economy in the first few years,—that is, economy in books; and economy brings with it simplicity of method, and simplicity of method is inseparable from good teaching and sound knowledge. One who has had some experience would strongly dissuade parents from letting their children learn Latin, unless they are going to one of the professions as they are called, in which case they must learn it in some way or other. If the cost of books is great in the first years of instruction, and if the progress is not quicker and surer than it is on the present system, far better would it be for the boy to learn French well, instead of a little bad Latin, at the cost of much money, much sorrow, and many years of useless labour. But, if Latin can be taught well in a reasonable time, then the advice would be, let all learn it whose education is to be anything more than the usual routine of what is called a commercial education. There is no one acquirement, save a decent knowledge of arithmetic, and the power of writing one's own language with ease and correctness, that can be turned to so many useful purposes as a knowledge of Latin—of that clear, precise, and noble language, out of which have sprung some of the most generally-diffused languages of western Europe, which has become so incorporated in our own as to make a real component part of it, which contains in itself an ancient literature only despised by those who are totally ignorant of it, and a modern literature too both copious, valuable, and universal. If those who write on scientific subjects would have an audience over all Europe and in her colonies, they must still use a language which was once universal, not only among men of learning, but among men of science; and, it may be, that the use of Latin for this universal communication may be revived when we have learned to use it as freely as our fathers did, which we shall do when we have got better teachers, discarded bad methods for good ones, and transported our shiploads of exercise books and other hinderances to Australia, or any other place that is further off.

Mr. Robson's exercises have been tried, and it has been found that boys, after a reasonable time, are prepared by this method to read a Latin author with profit, and that they have laid a sound foundation for a knowledge of the language by mastering its etymology. But any system of teaching the elementary part of Latin by writing only is insufficient; and the addition of Latin reading lessons to Mr. Robson's second edition seems to us not only to improve his plan materially, but to remove a serious objection to it. These reading lessons consist of four parts,—"The lessons founded on the first part of the Exercises consist of sentences composed by the author." There is some objection to a modern writer presenting anything of his own for boys to study; but these sentences are so short, and have been made with such care, that this objection, which cannot be entirely removed, is rendered of comparatively little weight. "The lessons in the second, third, and fourth parts are nearly all taken from the best authors, and chiefly from the writings of Cæsar, to which they are especially intended as an introduction." "The reading lessons extend only to the end of the fourth part, because it is considered that, when the pupil has reached that point in his studies, he will be sufficiently advanced to commence the reading of Cæsar. In using the lessons, it is recommended that they should be translated *vivâ voce* in class a day or two after the corresponding exercises have been written; and the student should be required to learn by heart the additional Latin words introduced into them. It will be found advantageous also to direct him to write on paper a translation of a few of the more difficult sentences in each lesson."

Mr. Robson's plan, is to have a set of progressive exercises, and corresponding reading lessons. The exercises require rules, of which there are a great many; and the rules are to be learned, and then exemplified by writing the exercises. This mode of teaching involves a material question, that of learning a language by rules, or rather of learning rules first and then applying them. We prefer the plan of learning without rules or generalizations, still leading the pupil up to rules or generalizations. There is nothing in Mr. Robson's book which a boy should not learn in some way; and it seems to us that it might be used in the inverse way to that which he recommends. The reading lessons might be learned first, and the corresponding exercises written afterwards. It may be said that, on the plan here recommended, a boy must still learn some rules and some generalizations; for instance, he must learn the declensions of nouns and conjugations of verbs. This is true: but, if a boy must begin with some generalizations, it does not follow that the number should be increased indefinitely. Mr. Robson's system of exercises, however, is so intimately connected with his mode of teaching the crude-form system, that there may be some doubt whether most teachers could handle the book in any other way than that which he intends. That some teachers could use it in a different way, and profitably too, we have no doubt.

Without assuming to settle the question, as to the mode of teaching the elementary parts of the Latin language, and with the conviction that Mr. Robson's book in the hands of a competent teacher will effect the purpose that he has had in view, we conclude with requesting all teachers who wish to improve the methods of learning the elements of the Latin language—and we hope and believe that the number of such is daily increasing—to compare Mr. Robson's method with that which is explained in the preface to the edition of Cicero, De Senectute, and De Amicitiâ, already referred to. Perhaps they may strike out something new; or, at any rate, the bare examination of the question cannot fail to have a beneficial effect on their teaching.

OUTLINES OF EXPERIMENTAL CHEMISTRY: BEING A FAMILIAR INTRODUCTION TO THE SCIENCE OF AGRICULTURE. DESIGNED FOR THE USE OF SCHOOLS AND SCHOOLMASTERS; BY THOMAS TATE, LATE MATHEMATICAL PROFESSOR AND LECTURER ON CHEMISTRY IN THE BATTERSEA TRAINING COLLEGE. (London: *Longmans.*)

This little volume will enhance the high reputation which Mr. Tate has acquired as a writer of cheap and compendious treatises for teachers, chiefly remarkable for their philosophical soundness and perfect simplicity. The experiments which he proposes are capable of being performed with the most inartificial apparatus. They remind us of the saying of an admirer of Dr. Wollaston, that the whole laboratory of that eminent experimentalist consisted of a brass thimble and a knitting needle. We quote a specimen of Mr. Tate's valuable manual. It is sure to find its way into the libraries of our elementary teachers:—

" CHAPTER VII.

" *Soils—Their composition—Organic and inorganic parts—Saline and earthy parts—Physical character of soils—To separate the sand from the clay—To determine the quantity of lime, of organic matter, and of the saline matter, in a soil—Origin of soils—Mechanical properties of soils—Chemical properties of soils.*

" COMPOSITION OF SOILS.

" 76. Soils, like plants, are composed of organic as well as of inorganic matter.

" The organic part of soils is chiefly derived from the remains of vegetable and animal substances. Peaty soils contain a large proportion of organic matter, while good wheat lands contain only about one-twentieth of their whole weight. This organic matter in the soil has been called humus, which, by the action of alkaline substances, is resolved into ulmic and humic acids. As the vegetable matter undergoes decay, this organic portion of the soil also gives to the land the various inorganic substances found in its ash.

" 77. The inorganic part of soils consists of certain saline soluble substances, and of certain earthy insoluble substances.

" 1. The saline soluble substances consist, in general, of common salt, sulphates of soda and magnesia, gypsum, with small portions of the nitrates of potassa, soda and lime, and of the chlorides of calcium, magnesium, and potassium, together with ammoniacal salt. From these soluble compounds the plant obtains nearly all the saline matter contained in the ash. The rain dissolves these saline substances, and carries them into the subsoil; but, in dry warm weather, they re-ascend to the surface, and are thus brought into contact with the roots of the growing plant. Thus, fine warm weather accelerates the ripening of corn and other valuable grain.

" 2. The earthy insoluble substances in the soils never constitute less than nine-tenths of their whole weight. The principal ingredients of this earthy matter are silica in the form of sand, alumina mixed with sand in the form of clay, and carbonate of lime. Where the soil has a red colour the oxide of iron is generally present. Minute traces of phosphate of lime may also be detected in most of good soils.

" PHYSICAL CHARACTER OF SOILS.

" 78. The relative proportions of sand, clay, and lime in a soil, give it a peculiar physical character. When a soil contains only a small proportion of clay, it is called a sandy soil; when the quantities of sand and clay are nearly equal, it is called a loamy soil or clay loam, according as the quantity of sand is greater or less than the clay; when the clay is much in excess, it is called clay loam or strong clay, as the case may be. Good arable land rarely contains more than one-third part of its weight of clay.

" 79. To separate the sand from the clay in a soil. Take about half an ounce of soil, and boil it in half a pint of water, in a porcelain dish, until it is completely diffused through the water; after shaking, let the mixture stand for a minute, to allow the sand to settle to the bottom of the vessel, while the clay remains suspended in the fluid; pour off the water with the floating clay into another vessel, and allow the clay now to settle. The sandy portion of the soil will be found in the first vessel, and the clayey portion at the bottom of the second. The sand and clay may now be dried and weighed separately, and the relative weights will give the proportion in which they subsist in the soil.

" 80. If a soil contains more than one-twentieth of its weight of carbonate of lime, it is called marl; and if more than one-fifth, it is called calcareous soil.

" To determine the quantity of lime in a soil, take 100 grains of the soil (which has been previously heated to redness, to destroy the vegetable matter), and diffuse it through about half a pint of distilled water; add about an ounce of hydrochloric acid, and allow the mixture to stand for a few hours, observing to stir it time after time. Bubbles of carbonic acid are given off. After the action has ceased, pour off the clear liquid; dry, and then heat the residue to redness, and weigh it; the loss is nearly the weight of lime and carbonate of lime in the soil.

" 81. To determine the quantity of organic matter. Dry about an ounce of the soil on paper in an oven, at a heat which does not char the paper; burn about 200 grains of this dry soil; the loss is nearly the weight of the organic matter contained in it.

" 82. To determine the quantity of saline matter. Take 2 lbs. of dry soil, and boil it in about a quart of distilled water; after allowing the solid matter to subside, pour off the clear liquid, and evaporate to dryness, at a moderate heat; weigh the residue, and it will give the quantity of soluble saline matter in the soil. In a good soil, this saline matter may weigh upon an average about 20 grains.

"ORIGIN OF SOILS.

"83. Soils owe their origin to the disintegration or gradual crumbling down of rocks, by the action of water, frost, air, and various chemical agents. Hence soils, in general, derive their peculiar character from the geological strata upon which they lie, or from the nature of the rocks in the adjacent hills or mountains.

"MECHANICAL PROPERTIES OF SOILS.

"84. Sandy and marly soils are heavy, while peaty soils are light. Strong clays and peaty soils absorb and retain moisture; hence they are damp and cold; hence, especially, the necessity for draining such soils. Sandy soils neither absorb nor retain much moisture; hence such soils become scorched with heat of summer, and the plants growing upon them are burned up. In rainy seasons, however, sandy soils frequently sustain a luxuriant vegetation, while the plants upon a clayey land almost perish from the excess of moisture.

"85. Heat causes clay and peat to contract. In doing so, the soil compresses the roots of the plants, and prevents the access of air, and thus the growth of the plant is retarded.

"86. The absorbent power of clay is useful in a soil, for during the hot and dry season of the year, in the cool period of the night, the clay absorbs the dew that falls upon it, and retains the moisture with greater tenacity.

"87. In order that plants may come to perfection, it is necessary that the soil on which they grow should attain a certain degree of warmth. Damp lands are cold, for the continual evaporation of the moisture carries off the heat of the sun; hence the necessity of draining.

"88. These observations show the value of a due admixture of clay and sand, in order to form a mixture, having all the mechanical qualities of a fertile soil, where the earthy constituents are so adjusted that 'the loose and porous qualities of the one are corrected by the plastic and retentive qualities of the other.' It is a remarkable fact, that a mixture of alumina, silica, and lime absorb gaseous matter as well as moisture, better than any of these earths taken by itself.

"CHEMICAL PROPERTIES OF SOILS.

"89. Soils not only sustain a plant in an erect position and afford it food but they are the medium in which various chemical actions are gradually and constantly going on in the preparation of different substances essential to the growth of plants. Thus, lime is constantly decomposing vegetable and animal matter in the soil, and thereby preparing food for the plant. Thus, organic substances in the soil aid in absorbing ammonia and carbonic acid from the air. Thus, little grains of alkaline silicates are gradually reduced to powder, and in this state water dissolves the alkaline matter.—(See Exp. 1, Art. 28.)

"90. A fertile soil should not only contain all the elements essential to the growth of a plant, but they should exist in due proportion. A deficiency of one substance, or an excess of another, may equally contribute to deteriorate the quality of land. Hence the utility of artificial applications to land, whereby the farmer is enabled to supply what may be deficient, or in some degree to neutralise the influence of what may be in excess.

"The following analyses of three different soils, by Dr. Sprengel, afford a striking illustration of these remarks:—

"1000 parts of each soil contained as follows:

	No. 1.	No. 2.	No. 3.
Fine earthy and organic matter	937	839	599
Siliceous sand	45	160	400
Saline soluble matter	18	1	1
	1000	1000	1000

"100 parts of the fine earthy and organic matter contained:

	No. 1.	No. 2.	No 3.
Organic matter	97	50	40
Silica	648	833	778
Alumina	57	51	91
Lime	59	18	4
Magnesia	8·5	8	1
Oxide of iron	61	30	81
Oxide of mangenese	1	3	0½
Potassa	2	trace	trace
Soda	4	0	0
Ammonia	trace	0	0
Chlorine	2	0	0
Sulphuric acid	2	0¾	0
Phosphoric acid	4·5	1¾	0
Carbonic acid	40	4½	0
Loss	14	0	4½
	1000	1000	1030

"No. 1 is a highly fertile soil, which had grown corn and pulse crops without the application of any manure. The soil seems to contain all the essential constituents of plants.

"No. 2 is a fertile soil, which required to be manured with gypsum. The analysis indicates a deficiency of soluble saline matter, with only traces of potassa, soda, and sulphuric and other acids.

"No. 3 is a barren soil. It is deficient in organic matter. Potassa, soda, &c., are almost wanting. Lime, oxide of iron, and silica seem to be largely in excess. In order to render this soil productive, it would require, not only to have added those substances which are absent, but some other substances, which would tend to neutralise the matters in excess."

AN ELEMENTARY COURSE OF GEOLOGY, MINERALOGY, AND PHYSICAL GEOGRAPHY. BY DAVID T. ANSTED, M.A., F.R.S. (London: *John Van Voorst.*)

This sensible volume is especially valuable for the elementary course of instruction which the author supplies on physical geography and mineralogy. It is enriched with numerous illustrations, most of which have been selected from Regnault's "*Chimie,*" and Beudant's "*Cours Elémentaire de Géologie.*" It is too deep and elaborate, perhaps, for Pupil Teachers, but it may be very advantageously used by Schoolmasters, who wish to keep in advance of them.

BLACK-BOARD FOR SCHOOLS.

We extract from the Toronto *Journal of Education* the following instructions relative to the preparation and use of the plaster black-wall, which in every school should take the place of the inconvenient black-board.

In the first place, the scratch coat, made with coarse sand, is spread upon the laths as usual, and the brown coat follows, being left a little rough under the "float." When the brown coat is perfectly dry, the black coat is laid on.

This is prepared of mason's "putty" and ground plaster and beach sand, mixed in the usual proportions for hard finish. The colouring matter is lamp-black, wet with alcohol or whisky, forming a mixture of the consistency of paste. This is mixed with the other ingredients just as they are about to be spread upon the wall. The quantity of colouring to be used must be sufficient to make a black surface; the sufficiency being determined by experiment—no rule can be given.

An intelligent mason can very soon try experiments so as to ensure success. It is to be remembered that the black surface requires much more working with the smoothing trowel than ordinary white finish. It should be finished by being softly smoothed with a wet brush. When perfectly dry, it is nearly as hard as slate, and almost as durable, if carefully used. Great care should be taken not to put in *too much* lamp-black. The advantages of this kind of black surface over the ordinary black-board, are: 1. The chalk easily takes effect upon it. 2. The chalk is much more easily wiped off. 3. There is but little noise made in writing upon it. 4. There is no reflection of light upon it. 5. It is cheaper; it costs but a trifle more than ordinary hard finish.

Additional Suggestions.—In building a new school-house it would be well to have a belt of this black surface pass entirely around the room, at the proper height. In a common school, when small children are to use it, its lower edge should be about two feet from the floor, extending thence upward from 3 to 3½ feet. At the lower edge there should be a "chalk trough" extending the whole length, made by nailing a thin strip of board to the plank which bounds the black-board, leaving a trough two inches in width and depth, in which to place the chalk, brushes, pointers, &c.; this would also catch the dust which is wiped from the board. The upper edge should be bounded by a simple moulding.

The Brushes.—The best thing for removing the chalk from the board is a brush, made of the size of a shoe-brush, with a wooden handle on the back, the face being covered with a sheep-skin with the wool on. This removes the chalk at a single sweep, without wearing the surface, and without soiling the hand of the operator. This is a great improvement over a dust-cloth or a sponge.

In all cases let the board be kept dry; never allow a pupil to wet the wiper when removing the chalk.

Renovation.—By long use, especially if the surface is ever cleaned with a wet wiper, this kind of black-board becomes too smooth and glossy upon the surface; the chalk passes over it without taking effect, and the light is reflected by it. A very simple wash, applied with a white brush, will immediately restore it; this wash is made by dissolving one part of glue to two parts of alum in water, so as to make a very thin solution. It is well to have this wash slightly coloured with lamp-black. Care must be taken that this wash do not have too much "body."

The above directions, if carefully observed, it is believed, will be found sufficient to enable any master to procure, at a cheap rate, an adequate amount of black-board, ready for use at all times. If these suggestions shall tend to promote the welfare of the schools, by improving the means of instruction in the schools, the writer will have a sufficient reward.

INVESTIGATION OF THE LAWS OF INDICES.

THERE are six Laws of Indices:

$$\text{I.}\quad a^m \times a^n = a^{m+n},$$
$$\text{II.}\quad a^m \div a^n = a^{m-n},$$
$$\text{III.}\quad (a^m)^n = a^{mn},$$
$$\text{IV.}\quad \sqrt[n]{(a^m)} = a^{\frac{m}{n}},$$
$$\text{V.}\quad a^m \times b^m = (a\,b)^m,$$
$$\text{VI.}\quad a^m \div b^m = \left(\frac{a}{b}\right)^m;$$

where m and n may be whole or fractional, positive or negative.

Strictly speaking, however, there are but *three* laws, for the second, fourth, and sixth laws may be viewed as varieties of the first, third, and fifth respectively; and the former three laws might therefore be omitted. I deem it most advantageous, however, to state the laws as above. Perhaps it might be convenient to call I., III. and V. *primary* laws, and II., IV. and VI. *secondary* laws.

In the first place, let m and n be positive integers:

$$\begin{aligned}
&a^m \text{ means } a \times a \times a \times \ldots (a \text{ being repeated } m \text{ times}),\\
&\text{and } a^n \text{ means } a \times a \times \quad \ldots (a \text{ being repeated } n \text{ times}),\\
\therefore\ &a^m \times a^n = a \times a \times a \times \ldots (a \text{ repeated } m \text{ times}),\\
&\qquad\qquad \times\ a \times a \times \ldots (a \text{ repeated } n \text{ times}),\\
&= a \times a \times a \times a \times a \times \ldots (a \text{ repeated } m+n \text{ times}),\\
&= a^{m+n};
\end{aligned}$$

which is the first law.

Again, if $m > n$, so that $m - n$ is positive, we have, by what has just been proved,

$$a^{m-n} \times a^n = a^{(m-n)+n} = a^m,$$

Divide by a^n, $\therefore a^{m-n} = \frac{a^m}{a^n}$, which is the second law.

By the first law,

$$a^p \times a^q \times a^r \times a^s \times \dots\dots = a^{p+q} \times a^r \times a^s \times \dots\dots$$
$$= a^{p+q+r} \times a^s \times \dots\dots$$
$$= a^{p+q+r+s} \times \dots\dots$$
$$= a^{p+q+r+s+\dots\dots}$$

Let p, q, r, s .... be n in number and each $= m$,

$$\therefore a^p \times a^q \times a^r \times a^s \times \dots\dots = a^m \times a^m \times a^m \times a^m \times \dots\dots$$
$$= (a^m)^n,$$

and, $p + q + r + s + \dots\dots = m\,n$,

$$\therefore (a^m)^n = a^{m\,n},$$

and this is the third law.

Again, let m be a multiple of n, so that $\frac{m}{n}$ is an integer $= k$, (suppose); hence, by the third law,

$$(a^k)^n = a^{kn} = a^m.$$

Since then a^k raised to the n.th power is equal to a^m, a^k is the n.th root of a^m, (by the definition of a root),

$$\therefore a^k, \text{ that is, } a^{\frac{m}{n}} = \sqrt[n]{a^m},$$

which is the fourth law.

Moreover, $a^m \times b^m = a \times a \times a \times \dots\dots$ (a repeated m times),
$\times\, b \times b \times b \times \dots\dots$ (b repeated m times),
$= ab \times ab \times ab \times \dots\dots$ (ab repeated m times),
$= (ab)^m$,

and this is the fifth law.

Finally, $\dfrac{a^m}{b^m} = \dfrac{a \times a \times a \times \dots\dots (a \text{ repeated } m \text{ times})}{b \times b \times b \times \dots\dots (b \text{ repeated } m \text{ times})}$,
$= \frac{a}{b} \times \frac{a}{b} \times \frac{a}{b} \times \dots\dots$ ($\frac{a}{b}$ repeated m times),
$= \left(\frac{a}{b}\right)^m$;

which proves the sixth law.

The four laws, I., III., V. and VI. have therefore been established when m and n are any positive integers whatever; but II. has been proved only when $m \mathrel{7} n$, and IV. only when m is a multiple of n. The second and fourth laws, therefore, have not been shown to be true universally, and indeed there are difficulties in the way of their being so.

If, in II., we suppose m equal to, or less than, n, we shall introduce zero or negative indices, and we shall require to know what such symbols as a^0 and a^{-n} mean. Now the interpretation of a^0 and a^{-n} must, if possible, be effected in such a way that II. shall be true universally; let us see therefore, in the first place, what interpretations are *necessary* to the truth of II., and we shall then endeavour to ascertain whether they are *sufficient*.

In II., let $m = n$, $\quad \therefore \dfrac{a^m}{a^m} = a^{m-m}$;

But, $\dfrac{a^m}{a^m} = 1$, and $a^{m-m} = a^0$,

$$\therefore a^0 = 1^*$$

Again, let $m = o$, in II.,

$$\therefore \frac{a^0}{a^n} = a^{-n};$$

But $a^0 = 1$, as has just been proved,

$$\therefore a^{-n} = \frac{1}{a^n}.$$

It is to be observed that $a^{-n} = \frac{1}{a^n}$, even when n is negative. Let $n = -q$, then, since q is positive $\frac{1}{a^q} = a^{-q}$, take the reciprocal, $\therefore a^q = \frac{1}{a^{-q}}$, but $q = -n$, $\therefore a^{-n} = \frac{1}{a^n}$, whether n be positive or negative.

It is necessary therefore, to the generality of the second law, that a^0 and a^{-n} should be viewed as merely other ways of writing unity and $\frac{1}{a^n}$; and it must now be shown that this interpretation is sufficient.

If $m = n$, then II. is evidently true. Let $m \angle n$, then, since $n \mathrel{7} m$, we have, by the second law,

$$\frac{a^n}{a^m} = a^{n-m}.$$

Take the reciprocal of each member of this equation,

$$\therefore \frac{a^m}{a^n} = \frac{1}{a^{n-m}} = a^{-(n-m)} = a^{m-n}.$$

Again, the difficulty with respect to the fourth law is this: If m be a multiple of n, then $a^{\frac{m}{n}}$ $\left(\frac{m}{n}\right.$ being really an integer$\left.\right)$ is an intelligible expression; but if m be not a multiple of n, $a^{\frac{m}{n}}$ is without meaning; and we shall require to know the signification of fractional indices before we can proceed one step further. Now, the interpretation of $a^{\frac{m}{n}}$, when $\frac{m}{n}$ is a fraction irreducible to an integer, must if possible be effected in such a way that IV. shall continue to be true; and this object will be attained if, (m and n being positive integers,) we consider $a^{\frac{m}{n}}$ to mean $\sqrt[n]{a^m}$, the n.th root of the m.th power of a; the numerator of the

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[*] This is the ordinary "proof" (as it is called) that $a^0 = 1$. It is really founded on the assumption that the second law of indices is true in a case for which it has not been proved.

fraction, $\frac{m}{n}$ denoting the power to which a is to be raised, and the denominator expressing the root to be extracted.*

An interesting question here presents itself:—Can we treat the index $\frac{m}{n}$ as a fraction; that is, can we multiply or divide numerator and denominator by the same number? The following investigation will show that this question must be answered in the affirmative:

$$\text{Let } x = a^{\frac{m}{n}}, \text{ or } \sqrt[n]{a^m},$$
$$\therefore x^n = a^m \text{ (by the definition of a root)},$$
$$\therefore (x^n)^r = (a^m)^r.$$
$$\therefore \text{(III.) } x^{nr} = a^{mr},$$
$$\therefore x = \sqrt[nr]{a^{mr}} = a^{\frac{mr}{nr}};$$
$$\text{But } x = a^{\frac{m}{n}}, \quad \therefore a^{\frac{m}{n}} = a^{\frac{mr}{nr}}.$$

T. W.

(*To be continued.*)

ANSWERS TO THE MATHEMATICAL QUESTIONS.

Ques. 63.—*Proposed by Mr. J. Sheppard.*

On entering a school, I observed by the clock that it was between 9 and 10; on leaving, it was between 10 and 11, the hands having exactly changed places. How long did I stay there?

Answered by Mr. W. Righton, Mr. T. Sothern, F. W. B., Mr. Ward.

Let x = the distance between the hands in hours, which is also the distance gone by the hour-hand in hours, the time in school. But while the minute-hand is going

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* Perhaps it may be interesting to obtain the interpretation of zero, negative, and fractional indices from the *primary* laws.

Here we have to answer the following questions:—

1. What must a^0 and a^{-n} signify, that the first law of indices may be true when one of the indices is zero or negative? 2. What must $a^{\frac{m}{n}}$ signify, that the third law of indices may be true when one of the indices is fractional?

$$\text{In I. let } m = 0, \quad \therefore a^0 \times a^n = a^n,$$
$$\text{Divide by } a^n, \quad \therefore a^0 = 1.$$
$$\text{Let } m = -n \text{ in I.}, \quad \therefore a^{-n} \times a^n = a^0 = 1.$$
$$\text{Divide by } a^n, \quad \therefore a^{-n} = \frac{1}{a^n}.$$
$$\text{In III. put } \frac{m}{n} \text{ for } m, \quad \therefore \left(a^{\frac{m}{n}}\right)^n = a^m,$$
$$\text{hence, by the definition of a root, } a^{\frac{m}{n}} = \sqrt[n]{a^m}.$$

$(12 - x)$ hours, the hour-hand goes x hours. Now since the ratio of their rates is $12 : 1$,

$$12 - x : x :: 12 : 1$$

$$\therefore 12x = 12 - x$$

$$\therefore x = \tfrac{12}{13}\,hr = 55\tfrac{5}{13} \text{ min. the time in school.}$$

QUES. 64.—*Proposed by Mr. S. Dyer, Kingston School.*

Given $x^2 = \dfrac{13x + 6}{9x}$ to find the value of x.

Answered by J. B. B., Mr. C. Elsee, and Mr. F. R. Crampton.

Multiplying the proposed equation by x^2, &c., we readily obtain,

$$x^4 - \tfrac{13}{9} x^2 = \tfrac{2}{3} x,$$

adding $\frac{4}{9} x^2$, and completing the square,

$$x^4 - x^2 + \tfrac{1}{4} = \tfrac{4}{9} x^2 + \tfrac{2}{3} x + \tfrac{1}{4},$$

$$\therefore x^2 - \tfrac{1}{2} = \tfrac{2}{3} x + \tfrac{1}{2}.$$

Solving this quadratic, we find

$$x = \tfrac{1}{3}(1 \pm \sqrt{10}) = 1{\cdot}387 \text{ or } - {\cdot}7207.$$

Moreover $-\frac{2}{3}$ is also a root of the equation.

Or thus by Paddy Whack, Sheffield.

By an obvious reduction, we find

$$x^3 - \tfrac{13}{9} x = \tfrac{2}{3}.$$

Now putting $z + \frac{13}{27z}$ for x, (See Tate's *Algebra*, page 102,) we have

$$\left(z + \tfrac{13}{27z}\right)^3 = \tfrac{13}{9}\,\underline{\left(z + \tfrac{13}{27z}\right)} = \tfrac{2}{3}.$$

Whence we find, $z = \dfrac{1}{\sqrt[3]{3}}$, and by substitution,

$$x = \frac{1}{\sqrt[3]{3}} + \frac{13\sqrt[3]{3}}{27} = 1{\cdot}387.$$

QUES. 65.—*Proposed by Mr. O'Clazey, Durham.*

Suppose the distance between Durham and York to be 60 miles, and that York is 38, and Durham 18 miles east of the same meridian; where must I place myself upon that meridian, so that I may be equidistant from each town?

Answered by Mr. J. Moffitt, Durham, and the Proposer.

From H, the bisection of the line D Y joining Durham and York, draw H P at right angles to D Y, meeting the meridian in P: also, from H and Y draw H S and Y C at right angles to the meridian, and D O parallel to it, cutting Y C in O. Then by the question

$$DY = 60,\ CO = 18, \text{ and } CY = 38;$$

$$\therefore OY = 20,\ OD^2 = 60^2 - 20^2 = 3200, \text{ and}$$

$$SH = \tfrac{1}{2}(CY + CO) = 28.$$

By the similar triangles O D Y and S P H, we have

$$OD^2 : DY^2 :: SH^2 : HP^2,$$

$$3200 : 3600 :: 784 : HP^2$$

$$\therefore HP^2 = 882,$$

$$\therefore DP \text{ or } PY = \sqrt{HD^2 + HP^2} = \sqrt{900 + 882} = 42{\cdot}213 \text{ miles},$$

which is the distance required in the question.

LIST OF MATHEMATICAL ANSWERS.

J. B. B., Pembroke Dock, ans. 63, 64, 65; O'Clazey, Durham, ans. 63, 64, 65; J. Hewitt, Cambridge, ans. 63, 64, 65; Nero, Berwick, ans. 63, 65; Paddy Whack, Sheffield, ans. 63, 64, 65; J. Moffitt, Durham, ans. 63, 64, 65; T. Wilson, Sebergham, ans. 63, 64, 65; T. P., Haydonbridge, ans. 63, 64, 65; F. W. B., Pembroke Dock, ans. 63, 64, 65; F. R. Crompton, St. John's Wood, ans. 63, 64, 65; A. Mason, Moorsley, Durham, ans. 64, 65; C. Elsee, Henley-on-Thames, ans. 63, 64, 65; F. H. N., Ashford, Kent, ans. 63; J. W. Ward, Fleet Street, ans. 65; J. Sheppard, Gillingham, ans. 63, 64, 65; Hibernia, Stockton-on-Tees, ans. 65; J. W. Leaver, Woolwich, ans. 63, 64, 65; J. Herbert, Woolton, ans. 63, 64, 65; T. Sothern, Burtonwood, ans. 63, 64, 65; W. Wakely, Marlbro', ans. 65; J. Bowes, Liverpool, ans. 63, 64, 65; J. Salter, Durham, ans. 63, 64, 65; Emma Royds, Hollingworth Free School, ans. 63, 64, 65; L. Saywell, Tardebigge, ans. 63; G. Barnacle, Empingham, ans. 63, 64, 65; W. Brab, Mile End, ans. 63, 64, 65; J. Royds, Belfield, Rochdale, ans. 63, 64, 65; W. Williams, Liverpool, 63, 64; J. Norman, Wellington, ans. 63; J. Brown, Barton, ans. 63; B. Whitham, Wolverhampton, ans. 63, 64, 65; S. Dyer, Kingston, ans. 63, 64, 65; I. Stanwick, Richmond, Yorkshire, ans. 63, 64, 65; W. Righton, Ripley, ans. 63, 64, 65.

NEW QUESTIONS,

TO BE ANSWERED IN OUR NUMBER FOR JULY, 1850.

QUES. 66.—*Proposed by J. H.*

If 5 excavators sink a circular shaft, 8 feet in diameter and 125 fathoms deep, in 100 days of 10 hours each; how many nights of 7 hours each will 4 excavators be in sinking another shaft, 6 feet in diameter and 75 fathoms in depth; the difficulty of working by night being one-seventh greater than that of working by day, and the hardness of the latter ground being to that of the former as 7 to 5?

QUES. 67.—*Proposed by Aquarius.*

How many imperial gallons of water will be discharged by a metal pipe, one mile in length, three inches diameter, and having twenty feet fall from the head of the water.

QUES. 68.—*Proposed by Mr. O'Clazey, Durham.*

A steam-boat sails from Liverpool at ten in the morning in a direct line for Douglas, at the rate of 15 English miles per hour. Another sails from the same port at noon, in a direct line to Dublin, at the rate of 20 miles per hour. What is the distance between them at 2 P. M., supposing the distance from Liverpool to Douglas to be 82 miles, that from Liverpool to Dublin 142 miles, and that from Dublin to Douglas 98 miles?

PROTEST OF THE UNIVERSITIES AGAINST THE PROPOSED UNIVERSITY COMMISSION.

May 8.

THE following important correspondence has passed between the Premier and the Chancellor of the University of Oxford. Lord John Russell has addressed a similar letter to his Royal Highness the Chancellor of Cambridge:—

My Lord Duke,—Having announced in my place in Parliament the intention of Her Majesty's Ministers to advise that a Royal Commission should be appointed to inquire into the state and revenues of the Universities of Oxford and Cambridge; into the provisions of the statutes by which the said Universities and their several Colleges are governed; and to report their opinions whether any measures can be adopted by the Crown or by Parliament by which the interests of religion and sound learning may be promoted in the conduct of education in the said Universities; I am anxious to explain to your Grace the views of Her Majesty's confidential servants in recommending this measure for Her Majesty's approbation.

I will not enter here into the question of the legality of such a commission. Had it been proposed to exercise powers going beyond inquiry and report, such a question might enter into consideration. But the present commission will be a commission to receive evidence and to report opinions, without powers to determine any question or to prescribe any course. It becomes the more expedient that the views which are entertained on the subject should be explained.

No one will now deny that in the course of three centuries the increase of general knowledge, the growth of modern literature, the discoveries of physical and chymical science have rendered changes in the course of study at our national Universities highly expedient. The Universities themselves have acknowledged this expediency, and very large reforms of this nature have been adopted both at Oxford and at Cambridge. These improvements, so wisely conceived, reflect the highest credit on those learned bodies.

The object of the proposed commission is not to interfere with these changes, but to facilitate their progress; not to reverse the decisions of the Universities by an authority *ab extra*, but to bring the aid of the Crown, and if necessary of Parliament, to assist in their completion.

This can be done in two ways:—First, by ascertaining and recording, for the information of the Queen and the two Houses of Parliament, the new regulations which have been promulgated, and the mode in which those regulations are expected to take effect.

Secondly, by obtaining a knowledge of the obstacles which are interposed by the wills of founders, the retention of customs, and the decisions of competent authority to the full development of that large and improved system of study which the Universities have sought to establish.

I will explain the nature of the obstacles to which I allude.

In many cases the advantages and emoluments of the separate colleges are limited by the wills of the founders, either to the natives of some particular county or district, or to the scholars educated in a particular school, or in some instances to the descendants of the founder and his family. Such restrictions cannot fail to be injurious, and to be injurious in proportion as the field of choice is narrowed by the particular condition annexed to the advantages of the college. In other instances the directions of the founder's will cannot be complied with under the existing law, and in such instances it might fairly be considered whether the interests of learning and the wants of the country may not be better considered by an expansion of the governing statutes.

Matters of this nature, however, require deliberate and calm inquiry. Commissioners conversant with the state of our Universities, and versed in a knowledge of the general policy of our law, will be of essential service as well in pointing out the path of safe improvement as in marking the dangers of heedless innovation.

Various questions may and must arise in the course of this inquiry. For instance, has the school which has the privilege of commanding fellowships or other advantages in any particular college fallen off or increased in numbers and consequence since the bequest was made? Has the family of the founder left few or many descendants to enjoy his bounty? In the case of religious services prescribed by the founder, but now prohibited by law, does it appear to be the wish of the founder that in case no such religious services could be performed the foundation was or was not to aid in the purposes of education? In the case of Royal foundations how far has the Crown the power of consulting the good of the University in the application of the endowment of a former Sovereign? These and similar questions require care for their investigation, and prudence in their solution. For this purpose the utmost care will be taken in selecting Commissioners, who may not only be well qualified for their important task, but who may inspire confidence and respect by their character and position.

I have the honour to be, my Lord Duke, your faithful and obedient servant,

His Grace, the Duke of Wellington. J. RUSSELL.

COPY OF LETTER FROM THE DUKE OF WELLINGTON TO LORD J. RUSSELL.

London, May 9, 1850, at night.

My Lord,—I have had the honour of receiving your Lordship's letter of the 8th inst., upon the appointment of a Commission to inquire into the state of the English Universities, which I propose to send for the consideration of the governing authority of the University of Oxford, and to request to have the assistance of the opinions of the members thereof in a report, before I shall address your Lordship on the subject of your letter.

I have, &c. WELLINGTON.

(Copy.)

London, May 17, 1850.

My Lord,—In conformity with the intention which I assured your Lordship on the 9th inst. that I had formed, to send, for the consideration of the Vice-Chancellor of the University of Oxford and the Board of Heads of Houses, being the local governing authority of the University, your Lordship's letter of the 8th inst., as I was unwilling at this distance from the University to take upon myself to write upon topics so important without the benefit of their assistance, I now inclose a copy of their report, received this morning.

I have, &c. WELLINGTON.

To the Right Hon. Lord John Russell.

TO HIS GRACE FIELD-MARSHAL THE DUKE OF WELLINGTON, K.G., CHANCELLOR OF THE UNIVERSITY OF OXFORD, &c.

The Board of Heads of Houses and Proctors present their most respectful acknowledgments to his Grace the Chancellor of the University, for his communication to them of the 11th inst. through the Vice-Chancellor, inclosing a copy of a letter from Lord John Russell of the 8th inst., respecting the intended appointment of a Royal Commission to inquire into the state, revenues, and statutes of the Universities of Oxford and Cambridge, and of their respective colleges; and the board proceed, according to his Grace's desire, to report to his Grace upon this important subject.

They gladly recognise on the part of Her Majesty's Ministers their earnest desire to promote the interests of religious and sound learning, as well as to advance the cause of education; their approbation, also, of the reforms and improvements adopted by the University, and their wish and intention not to interfere with those changes, but to facilitate their progress, and to bring the aid of the Crown, and if necessary of Parliament, to assist in their completion.

This is the declared object of the proposed Commission, and this, it is further stated, can be effected in two ways:—First, By ascertaining and recording, for the information of the Queen and the two Houses of Parliament, the new regulations which have been promulgated, and the mode in which those new regulations are expected to take effect.

Secondly, By obtaining a knowledge of the obstacles which are interposed by the wills of founders, the retention of customs, and the decisions of competent authority to the full development of that large and improved system of study which the Universities have sought to establish.

We beg most respectfully to submit to your Grace, that whilst a Royal Commission, such as has been suggested, would in our opinion lead to many injurious consequences contrary to the intentions of Her Majesty's Ministers, it is also unnecessary in either of the purposes above specified.

As to the first of those purposes, the Sovereign or the Parliament can at any time obtain from your Grace, through your Vice-Chancellor, or from the printed University statutes, ample information respecting all the new regulations, and the mode in which they are expected to take effect.

And as to the second purpose, respecting supposed obstacles from the wills of founders, or other similar causes, to the full development of that large and improved system of study which the Universities have sought to establish, we believe (confining ourselves of course to this University) that if the supposed obstacles anywhere exist, they produce no material effect upon the general academical system.

For your Grace does not need to be informed that all our junior students are members at once of the University and of some college or hall. If they belong to any hall (the halls at Oxford being only places of study, not incorporated societies), then they are solely under the statutes of the University; but if they are members of colleges, which are all of them distinct corporations independent of one another, and in many respects independent of the University, still their studies, nevertheless, are regulated by the statutes of the University, and they receive instruction partly from the public professors, partly from tutors appointed indeed within the colleges, but recognised also and controlled by the general statutes of the University.

This combination of professorial and collegiate instruction is most important and beneficial, and some of the late changes in our system have been designed to restore this combined instruction to greater efficiency, when it had suffered some temporary interruption from the unforeseen and unintended effects of earlier measures of reform. But experience proves that there is no reason to apprehend any obstacles to the full development of the University system, as to the instruction of the younger students arising from any of the collegiate customs or statutes.

The recent regulations are only the latest of several successive measures of academic reform. The studies of this place have not continued, as would appear to be assumed in Lord John Russell's letter of the 8th inst., the same or nearly the same during the last three centuries; nor is it only of late that they have been altered or enlarged.

Two centuries ago—in 1636—the University revised the whole body of its statutes, and the academic system of study was admirably arranged at a time when not only the nature and faculties of the human mind were exactly what they are still, and must of course remain, but the principles also of sound and enlarged intellectual culture were far from imperfectly understood.

In process of time further changes and improvements became requisite, and the University has for the last half-century, since the year 1800, been continually engaged in a series of academic reforms, designed to adapt the system to altered circumstances, or to the advanced state of science in some departments of knowledge; and if these reforms, however well designed, have not always so completely answered the expectations of their authors, or if they have not always met the wishes of all the members of the academic legislature, still from no quarter whatsoever has any obstacle or obstruction been opposed to the full development of the system of the University, and it cannot justly be said that our reforms have ever failed to produce their full effect through the supineness, indifference, or incompetency of the public instructors of our youth, whether the professors in the University or the tutors of colleges.

So far, then, as respects the University, its institutions, and its recent regulations, whether with reference to the University itself or to the aid derived by its institutions from the colleges, we humbly submit that a Royal Commission will obstruct, instead of assisting, the natural progress and improvement of the academical system; and this is the declared—indeed, the only declared—object for the appointment of such a Commission.

Various suggestions, indeed, are subsequently thrown out, and various questions raised, in Lord John Russell's letter to your Grace, bearing upon the state and well-being of the separate colleges, but only indirectly affecting the welfare of the University.

The several colleges in Oxford have been founded at various times, from one to six centuries ago, in some few instances by Royal, but chiefly by private, munificence. They have exercised an important and very salutary influence upon the discipline and the education of the University. But it should be observed that they have not been usually founded, or in all cases endowed, by subsequent benefactors, directly for the education of youth, but for higher purposes.

The education of youth has, in most instances, been superadded to their other duties by the heads and fellows of colleges, of their own free will, to the great advantage of the community.

It may very well be that modern founders and benefactors might, in some instances, improve upon the ancient regulations if they were creating colleges anew of their own bounty; but it does not follow that the former foundations and endowments, when they are in no instance injurious to the community at large, often highly beneficial, ought therefore to be disturbed. If the restrictions upon the elections to fellowships, for example, might in some cases be advantageously modified or removed, still their removal would not to any considerable extent benefit the cause of education or sound learning, and the nature and amount of the existing restrictions, moreover, have been greatly exaggerated.

Fellowships are not commonly restricted to particular schools, but only scholarships or probationary fellowships, from which there is a subsequent election to the actual fellowships. The schools in question are for the most part our great public schools. The districts, again, from which confined fellowships are filled up, often comprise several populous counties. It is not often, if ever, that the mere lineal descendants of founders have a claim to these, but the kindred of the founders traced collaterally, and also beyond the founder to his remote ancestors, and embracing therefore very many families, and opening a wide field of choice. The degree of preference, moreover, is often so slight, that what are called confined fellowships may be, and sometimes are, filled up from other districts besides what are prescribed.

If the colleges themselves would sometimes gain by the removal of such restrictions, the University at large, and the general course of education, would be but little affected by the change.

Tutors of colleges are not necessarily appointed from the fellows on close foundations, or from the fellows of colleges at all. Even the colleges themselves are sometimes benefited by the various provisions under which their fellows are elected. One uniform principle of election, or one kind of qualification or standard of merit, would be prejudicial to the general interests of the several societies, and through them to the country.

But it should be especially recollected that, in all instances, trusts and vested rights have been created and have been sanctioned by the Crown or by Parliament, which could not now be generally abrogated without great detriment to the future interests of charity, and great injustice to the persons and families and districts interested in these endowments.

Similar remarks would apply to the statutes of colleges, which have also been supposed to require alterations through the aid of a Royal Commission.

In many instances there already exists some power to revise and alter ancient statutes, vested either in the colleges or their visitors. Wherever such powers are felt to be wanting or insufficient, and the colleges and their visitors desire additional powers of alteration, we do not doubt that the Legislature, upon a proper application made to them, would not be indisposed to confer such powers upon them. But for none of these purposes does the appointment of a Royal Commission appear to be requisite or desirable.

The preceding observations apply to the objects of the proposed Royal Commission, with reference to the University and to the colleges separately, and to the connection between the colleges and the University in respect of education. In each of these relations the Commission would appear, we respectfully submit, to be uncalled for, if not positively injurious.

And, generally, we would take the liberty of expressing our conviction, that such a Commission would entail several injurious effects upon the University, by no means contemplated by Her Majesty's Ministers.

However friendly their intentions towards the Universities and colleges, the appointment of such a Commission, immediately succeeding the attacks repeatedly made by persons very inadequately acquainted with these bodies, would be commonly and naturally regarded as even designed to continue and to sanction these attacks.

It would obviously tend, also, not only to interrupt our labours and studies, but to check and obstruct the natural and healthy progress of improvement, which has of late years proceeded as rapidly as is consistent with the proper working of the academical system.

And, without entering into the question of the legality of a Commission appointed only to inquire and report, it is obvious that it would be of the nature of an unconstitutional proceeding, since it would seek to attain indirectly what could not be directly attained without an open violation of the constitution and of the rights and privileges of Her Majesty's subjects. And we respectfully submit that Her Majesty's dutiful and loyal subjects ought not to be exposed to the painful alternative of either withholding evidence from a Commission so appointed, lest they should betray their trusts and sanction a proceeding apparently unconstitutional, or of allowing Her Majesty's Commissioners to listen only to imperfect information and partial statements upon subjects of great importance both to the Universities and the commuuity at large.

Signed on behalf of the Board of Heads of Houses and Proctors.

Oxford, May 16. F. C. PLUMTRE, Vice-Chancellor.

CAMBRIDGE, MAY 20.—The Vice-Chancellor, on Saturday, gave notice that a special congregation would be holden at Cambridge, on Monday, at which he would read a communication addressed to His Royal Highness the Chancellor by the Right Hon. Lord John Russell, on the subject of a Royal Commission proposed to be appointed, to inquire into the state and revenues of the Universities of Oxford and Cambridge. At the Congregation, the letter referred to was read by the Vice-Chancellor; but it is not at present to be printed. In connection with the subject, the Vice-Chancellor has this day announced that he has received the following Address:—

"Mr. Vice-Chancellor,—We the undersigned resident members of the Senate, beg leave to express to you, as the acting guardian of the interests of the University, the sentiments which have been excited in us by a recent declaration of the Prime Minister made in the House of Commons.

"The First Lord of the Treasury is reported to have announced that it is the intention of Ministers to advise Her Majesty to issue a Royal Commission to inquire into the revenues and education of the two Universities of Oxford and Cambridge; declaring also that one subject of such inquiry was to be, to ascertain means by which the instruction given in the College should be rendered serviceable in preparing students for the examinations in new subjects of study, lately instituted by the University.

"We have no wish to deny that such a harmony and connection between the subjects of College study and of University examinations should exist, as in fact such connection always has existed, and is likely to exist under the change of studies, if time and opportunity be left for its growth by the natural operation of University honours, and the advancement of those who have obtained them to the position of tutors and examiners. But we cannot help looking with the greatest alarm at the prospect of having attempts made to establish such a connection of College and University subjects by the action of any power extraneous to the University and the Colleges. We conceive that any attempt to compel the Colleges to appoint teachers or to reward proficients, by external agency, would be an interference with the internal freedom of a kind utterly unheard-of except in the worst times, and altogether destructive of their just and ancient corporate rights.

"The First Lord of the Treasury is reported to have further said that there exists, in the foundation and statutes of various Colleges, restrictions which prevent the Colleges from making proper arrangements for the teaching and encouragment of new studies, such as those above referred to. This is certainly a mistake with regard to the Colleges in this University. There is nothing in the foundation or statutes of our Colleges which will prevent them from changing their practical system so far as to include such newer sciences in their scheme of tuition and reward.

"We do not think it unreasonable that the Government should give the University and the Colleges credit for a willingness to make such changes, so soon as they can be made effectually. For the University has, in the course of the last few years, made many important changes, to which, in succession, the Colleges have generally adapted their systems. And the great change recently introduced, by which the moral sciences and the natural sciences are appointed to be subjects of examination and grounds of academic honour, was made spontaneously by the University, and has been followed up by a great increase of the interest taken in the lectures which bear upon the subjects thus encouraged.

"The effectual operation of such changes as those recently made necessarily requires some time. The new studies could be imposed with fairness upon those only who came to the University after the law was enacted. And, consequently, the first examinations under the new system have not yet been held. A few years will be required to give the tone to the auxiliary tuition which may be supplied on the new subjects; and, till the new honours have been actually attained, they cannot operate upon elections to Fellowships or other offices of emolument. But there is no reason to believe that such a train of mutual operation of one part of the University system upon another will not, in time, take place in this case as it has done in other cases, if the University be left to itself. The interference of a Commission, and the consequent introduction of legislative measures in Parliament, would prevent such a natural progress; for it would then be expected that the result of every step should be brought about through the agency of the Commission and of Parliament, not through the usual influences which operate in the University.

"If there be any cases in which a change of the statutes of any College is necessary in order to conform its practice to the recent improvements in the University system, the legal and customary mode is that the College should apply to the Crown as well as the Visitor, for confirmation of such change. In this manner, many changes and improvements have lately been made in College statutes. Several of the Colleges, comprising a large majority of the members of the University, have thus obtained new bodies of statutes with the full approval of the Crown of the changes made. In some cases such improvements have been made when it was known that they would lead to sacrifices of a pecuniary interest on the part of those who promoted them. Moreover, members of the University officially appointed have long been laboriously and assiduously employed in preparing a revised body of University statutes for confirmation by the Crown. We conceive, therefore, that there is no ground for suspecting either the University or the Colleges of any unwillingness to obtain an alteration of their statutes by legal means, when the better administration of their affairs requires such alteration.

"We believe that it is acknowledged by the best lawyers that a Royal Commission sent to colleges or to either of the Universities, and claiming power to regulate the affairs of those bodies in a way different from that prescribed by their statutes, is illegal and unconstitutional. We would submit to you that the acknowledgment of this illegality—one of the fruits of the Revolution of 1688—will no longer be of any value to Universities and colleges, if the Ministry for the time being, after sending down a Royal Commission, as is now proposed, take occasion therefrom to introduce into Parliament Bills interfering with the revenues and internal arrangements and altering the statutes of Universities and colleges different in a manner from that which is conformable to the law of the land, and has hitherto been practised.

"The Commission, as is reported to have been officially declared in the House of Commons, would be without power to compel evidence. This being so, persons in positions of trust in the University, and in colleges, may think it their duty to decline giving evidence before the Commission on the matters committed to their trust. And if this should occur, the whole evidence brought before the Commission will be that of persons who have no official knowledge of the state of the case, and may very possibly be coloured by partial feelings and opinions adverse to the University and its recent proceedings.

"These being our grounds of alarm at the announcement above referred to, we request you, Mr. Vice-Chancellor, to take such steps as the emergency may appear to require; and to consider especially whether it may not be proper to represent to his Royal Highness, our Chancellor, the interference with our freedom, rights, statutes, possessions, and usages which appears to be threatened; and also the interruption which the issuing of a Commission of Inquiry, and the expectation of legislative measures consequent thereon, would undoubtedly occasion in the prosperous and progressive condition which we have of late enjoyed."

[Here follow about 150 Signatures.]

Intelligence.

ST. JAMES' PAROCHIAL DISTRICT, DEVONPORT.—*Education of the children of the poor in the principles of the Church of England. Account of the Examination of the Schools of this district by H. M. Inspector, and Abstract of Report made to the Lords of the Committee of Privy Council on Education.*—(Extracted from "The West of England Conservative," of 9th May, 1850.)—It is with feelings of much gratification that we fulfil the promise we made last week, and give our readers the benefit of a more detailed account of the interesting examination, which was conducted last Tuesday week, the 30th April, in the Schools of St. James' Parochial District, by the Rev. E. Douglas Tinling, H.M. Inspector of Church Schools, for the South Western District of England.

The Inspection commenced at the Boys' School in Moon Street, at 10 o'clock, where the Inspector was met by the Rev. Æneas B. Hutchison, and the Rev. R. H. Atherton, the Curates of St. James', Jas. Furneaux, Esq., Mr. Alderman Ryder, Mr. Commissioner Row, Messrs. Burnett and Hayward, R.N., with several ladies and other inhabitants of the district, and subscribers to the Schools, together with a large number of the parents of the children.

The first class, of 19 boys, was examined in the Holy Scriptures and Church Catechism, English History, Geography, Grammar, Arithmetic, Writing, from memory and dictation, and their ready and correct replies drew forth from one of the visitors a remark to the effect that it would be difficult in many of the numerous private schools of the Borough, to select a class of more intelligent and well-instructed lads.

The lower classes were each individually examined, in most of the above subjects, but, of course, only to an extent suited to the tender years of the children.

With the result of the examination, the Inspector more than once publicly expressed his entire satisfaction, and, addressing the parents present, observed, that it was evident that some one took an interest in the children, for it was fully apparent that they were well looked after, and carefully trained and instructed.

The two Pupil Teachers were also examined, as to their ability to instruct and drill a class, and the proceedings of the morning terminated at ½ past 1 o'clock, by the children singing several School songs, and the National Anthem, also Keble's "Child's Evening Hymn." which had been set to very beautiful and appropriate music by Mr. Joyner, master of the School.

The testimony of the Inspector to the value of the instruction imparted at the School, will be best gathered from the record he has made on the certificate of the master, which is as follows:—

"The discipline and order in this School, under Henry Joyner, are satisfactory. The instruction has been taken great pains with. I have been much pleased with the improvement made by the children, during the past year.

(Signed) E. DOUGLAS TINLING.
H. M. Inspector."

The following is an abstract of the returns made for this *one School* to the Committee of Council on Education:

TABLE 1.

NUMBER OF CHILDREN

Admitted within the last 12 months	92
Who have left within ditto . .	79
Now on the Books	106
Now in ordinary attendance , .	85
Present at examination . . .	94

	Under 7	8	9	10	11	12	13	14	Over 14	
On the Books aged	12	18	32	21	9	3	3	5	3	106

NUMBER OF CHILDREN READING.

Letters and monosyllables . . .	27
Easy narratives	32
Holy Scriptures	46
Books of general information . .	46

NUMBER OF CHILDREN WRITING

From copies (on slates)	59
From dictation or memory on do. ,	47
From copies (on paper)	78

NUMBER OF CHILDREN LEARNING ARITHMETIC AS FAR AS

Numeration or notation . . .	28
Addition, multiplication, and division	32

Compound rules and reduction .	39
Proportion and practice	3
Fractions and decimals	4
NUMBER OF CHILDREN LEARNING	
Geography	78
Grammar	46
History	19
Vocal Music from notes	12
Geometry	1
Algebra	3

TABLE 2.
St. James' Boys' National School.
Annual Expenditure.

	£	s.	d.	£	s.	d.
Salary of Master .	70	0	0			
Books, Maps, and Apparatus	50	2	6			
Furniture, Desks, and Fittings . . .	26	4	6			
Fuel, Cleaning, and Lights . . .	2	8	9			
Rent	8	0	0			
Rewards and Incidental Expenses . . .	9	6	1			
Printing . . .	1	8	6			
				167	10	4

Average Expense per child, on the average attendance of 83 . . . . £2 0s. 4d.

Annual Income.

	£	s.	d.	£	s.	d.
Local Subscriptions, (including one of £25 per annum, from Messrs. Baker and Son, Contractors for Keyham Works) . . .	33	5	0			
Private Collection for Fittings, &c. . .	24	15	8			
From School Pence .	28	11	1			
Grants of Books, &c. from Societies .	19	16	7			
Sale of Copy Books, Slates, &c. . . .	3	1	7			
				109	9	6
Deficiency				58	0	10

"This account is for the year ending, 11th September, 1849. The deficiency has been made good by the Clergy of the district."

N.B. This abstract does not include the expenses for the Mixed School in Garden-street and Keyham Infant School, which fall on the Clergy; or of the Girls' Industrial and Infant Schools in Navy-row, which are supported by the Sisterhood of Mercy.

Mr. Tinling also visited, in the afternoon of Tuesday, the Mixed School in Garden-street, and the Infant School at Keyham, but the elementary nature of the subjects taught in them did not allow of his making a very formal examination.

It may interest our readers to be informed of the strenuous efforts which are being made in this district, to provide a sound Scriptural and Church Education, for the mass of the people, and these will best be shewn by the subjoined statement of the numbers at the present moment under instruction.

The numbers on the books of the various Schools are as follow :—

Boys' National School, Moon-street .	106
Boys and Girls', or Mixed School, Garden-street	71
Keyham Infant School, Keates-place	40
Girls' Industrial School, Navy-row .	55
Infant School ditto . . .	110
TOTAL UNDER DAILY INSTRUCTION	382

In addition to these, numbers attend on Sundays, who frequent Private Schools during the week.

The Sunday Schools are conducted by nearly 30 Teachers.

* Evening School for Boys and Young Men	55
* Ditto, for Girls and Young Women .	22
Total under Instruction . .	459
Or including Sunday Schools . .	500

* These Schools are each held twice a week, and besides being taught Reading, Writing, and Arithmetic, the Scholars receive religious instruction from two most devoted voluntary, and gratuitous Teachers, assisted by other young persons, whose labours in this work of love are beyond all praise.

[We insert this at length, because it is a good reply to those minute and venal scribes, who say that the clergy are the champions of popular ignorance.—ED.]

To Correspondents.

J. B. is informed that about 280 men have passed through the institution he refers to; taking into account deaths and other causes, about 240 is assumed to be the number now actually employed.

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL.

[This diary was not written for publication: it contains, however, told in a quaint way, much that is interesting and instructive.]

No. 5.

ODDS AND ENDS.

The Irish wake, at the best, is but a custom of very equivocal utility or advantage, to either the dead or the living; and I wonder, sometimes, that the more sensible of the Romish Priests do not use their influence to set aside such observances, especially in crowded neighbourhoods. I am this morning feelingly alive to the subject; as I passed to and from school the effluvium which escaped out of a room where a dead body is undergoing the operation of *waking* was most offensive. . . . . I reported this nuisance in the proper quarter, and therefore I need not say more about it here. . . . . These *Wakes* are inconvenient and troublesome in many ways. The woman who occupies the next room to that in which the dead body alluded to was laid out, assures me that her family could not sleep for several nights, on account of the riot and howlings made by the watchers. And Jack ——, who has been staggering about the court all day, the object of much ridicule, gave me as his excuse for being tipsy that he had been at the wake, and sure the man was a *relation of his own, bekase both their grandmothers were cousins.* I was obliged to smile at the idea of a man of fifty years of age sitting up night after night to weep and groan over the remains of a person so slightly related; for it was on account of the *relationship* alone that he professed himself interested in the deceased. He freely owned that whilst his dear departed relation was alive he had known very little of him; in fact, they had not been personally known to each other until very lately.

This keeping of vigils over the dead is a custom so much cherished by the Roman Catholics, and one which, under some circumstances, is in itself so harmless, that I have, perhaps from motives of delicacy, abstained heretofore from taking any notice of it; but, situated as these wretched people are—huddled together six or a dozen in every room—it would, without doubt, be doing them a real kindness were they obliged to bury their dead within a day or two after death. I suspect that it is not very generally known that bodies are frequently taken from the workhouses and the prisons to the lodgings of the deceased persons' friends or relatives to be *waked,* and thereafter to be buried from thence. I know several instances of very recent occurrence where this has been done, and these *wakes* were all attended with many excesses: injurious to the public health, it must be, thus to coop up the dead with the living; on other grounds it is an expensive indulgence. I have seen men on a Sunday morning going about the alley soliciting money enough to *wake* and *bury* the body of a convict, of which they had obtained possession. . . . .

As our prisons are now managed, they can only be looked upon as houses of confinement, and this must always be the case so long as we have masses of the population who are utterly devoid of those feelings which give rise to shame and the sense of degradation which ought to attend, and is supposed to attend, imprisonment for crime. I have studied very narrowly the conduct of these people towards such of their community as have been liberated from jail, and I observe that they are hailed by their friends and acquaintances much in the same way as if they had returned from a long voyage: they are not shunned in the least; they are rather courted than otherwise, and their society is sought after as if they were persons of some consequence. We had lately a soldier from India, who fought under Lord Gough, and a liberated felon introduced amongst us in the same day; they were both received by the neighbourhood on equal terms. I must do the soldier the justice to say that I never saw him in company with the other man; but, I must also add, that the soldier did not appear to be so popular as the jail-bird. The latter has always about him a knot of hale fellows well met.

At this moment the parties are thus occupied:—The soldier, a labouring man just recovering from an illness, an old woman who is knitting, and a young married woman who is nursing *two* infants, are all grouped together in a cool corner at the bottom of the court; they have each a chair, or a stool, to sit upon, and they are talking quietly about something which is evidently pleasing and agreeable. Further up, about fifty yards from them, there is a very different gathering. The low brick wall of the large disgusting dust-hole serves as a seat to seven or eight young men, of whom the jail-bird is one; they are smoking short pipes and carrying on a bantering conversation with half-a-dozen young women, who are sitting on the ground opposite to the dust-hole. The girls are much flushed and excited, I might say exhausted, for most of them have their knees drawn up, so that they can rest their arms lazily thereon; their long hair is hanging in disorder about their naked shoulders; and, on the whole, they have a very wild uncivilized appearance. I learn that nothing very extraordinary has taken place, they have only been making a Grecian *free*.

These girls can read and write. Mary ——, Julia ——, and Kate ——, were regular in their attendance at our school during the past winter and spring; they are (considering their homes) well-behaved girls. If a stranger to these people had seen what I saw to-day, it is probable that he would, very erroneously, have set them all down in his mind as abandoned—a class, by many, thought irreclaimable. They are not so, and I am forced to acknowledge that such conduct, as I have hinted at, is just what might be expected from youths who have been bred in courts and lanes, and not in homes. It seems miraculous that we have so much virtue, and decency amongst us—a daily recurring miracle it is—that the very dignity of our species renders the young, for a time at least, superior to all degrading influences. Ideas of personal decency and self-respect no sooner bud than they are blasted in these crowded rooms. And I fear the effect, as it acts on the rising generation, will even be more visible in the course of a few years.

The grown-up people, with very few exceptions, have all been bred in country places in Ireland; and, although an Irish cabin at night may be just such another place as an Irish lodging-house in London, yet, I take it that the cases are not parallel. There is "no meanness in the country;" and if the night be passed in a crowded hovel, its inhabitants are usually of the same family, and the day being spent in country avocations some little individuality and self-respect may be preserved by men and women so situated: that is—a manly and a womanly decency may be observed. But such lodgings as they inhabit in London are destructive of everything that is good; even natural affection—with its humanizing influences—cannot be allowed to exist or display itself any more than a decent modesty.

I have been obliged to protect Dick —— from the insults of his companions: he was accused and found guilty of loving his mother. She is a poor charwoman, and he is her only child and only comfort. He was hooted at, and called an "Innocent"—*one who lets his mother fondle him.* The fact came out, that Dick went to his mother one day when she was sick in bed, and that he put his arms round her neck and said, "O mother, you must never die!" This was an exhibition of feeling which could not be tolerated in our alley. . . . . . . These boys appear to think that notoriety is fame! After which they have a morbid thirst. They confess their crimes without a blush, and they look on imprisonment without fear. This kind of punishment only hardens youthful offenders; so convinced am I of this, that I have interfered on two or three occasions to prevent my boys being taken before a magistrate. An imprisonment for a short period, for some trifling offence, is the sure forerunner of a second, or a third, that will lead ultimately to the offender becoming a candidate for transportation. I have punished, in the usual school-fashion, a boy for an act of theft, with a degree of success that would have led me to boast of my reforming power, were it not that a second attempt which I made did not turn out so well. . . . I was stoned for my officiousness. I have however not applied to the police for support since the first week of our being here. To league with them is to use physical force, which is repugnant to my feelings; indeed, I know that it would be impossible to carry on our school were we to support our authority by such means. Madame De Genlis gives this advice,—"Never make advances to your enemies; they would mistake generosity for terror." We have had many instances to prove the wisdom of her remark, and we have found that a cold silent reserve towards the unruly has more effect than scolding or forgiveness. The most ruffianly Irish boy has a kindly corner in his heart; but it is not to be got at by the exercise of gentle means; he would be sure to mistake concessions made to him. Let him alone, and his own volatile character will do the rest; he cannot bear to be neglected or passed unnoticed. One day, Mr. —— read prayers, and during the service he was obliged to stop, to order a boy out of the school, who had entered noisily with a dog in his arms. Instead of obeying, however, he threw the dog at Mr. ——, and a disturbance took place. Two boys left the school in consequence of this outrage; but I made no remark on this subject, at least, to those implicated. In a short time afterwards I received a letter from them which breathed repentance; but I did not grant a pardon in this case for various reasons. They were both thieves, and we are now nearly rid of boys who have been convicted—characters of this description cannot bear wholesome restraint or discipline; it is no *school* where they give the tone, where poverty and crime are jumbled together. Such an association is opposed to the spirit of our enterprise. Besides, their repentant letter settled the question in another way. A respectable tradesman, who has always interested himself in schools of this description, and who was the first man in the parish to employ a Ragged-school boy—the first respectable man who put confidence in any of them—called on me to show an anonymous letter which his *wife* had received by post. I have only to say, that anything more abominable I never read. On comparing the handwriting with that of the *repentant* epistle, there could be no doubt as to the identity of the authors. It is not surprising that the author of an anonymous letter should turn out to be a thief; nor, that a thief should have written anonymously (for no honest man would); but I was sorry, perhaps surprised, to hear that an honest woman had read a letter that had so vile an exterior. . . . . Two more children abandoned, one of them left naked in bed; the other in school, faint from hunger. Fortunately, Mr. ——, the barrister, called, and he looked after them; —glad of this, for I have been too troublesome to the officials lately. . . . . Idleness is their bane, they are always ready for a row or a gossip. I am told by a dress-maker, who lives near, that she does a good deal of work for these girls; they do very little for themselves; many of them cannot cook a meal properly, if they had the materials. Sorry to see that they purchase second-hand articles of clothing,—very bad sign in a woman. Thoughts of having a good cook placed in our staff, and also a model washerwoman. Cooking and cleanliness are great civilizing engines.

It was from some remarks of the Vicar of —— that I was first led to think it possible to tell, from the appearance of a child, as to whether it lived on cooked food. . . . . . . There is a distinctive mark on all children that have been well nursed and cared for in their infancy, that no after-trials or hard usage can efface: they have an openness, a frankness, about them that is unmistakeable. It is this breeding which is sometimes mistaken for blood by those who do not know, or have not thought, of how much the character of a man depends on his training in the nursery. A neglected child is pretty sure of being an expensive one to the parish, as it is very likely to be one that will live and die a pauper. As I look round my school sometimes, I can read by the character of my pupils much of what they have been, and of what they are to be; and it is pretty certain that, if a great effort be not made to counteract that spirit of apathy and dependence, which is becoming so apparent amongst the lower orders, the claimants for poor-house relief must increase vastly. The more you stint the pauper, the more you increase the rate; you cannot depress a man beyond a certain point without destroying him for ever as a useful member of society. . . . . . .

Here is a public-spirited individual, who has called to give me some advice, gratuitously, as to the mode in which our school ought to be conducted. He is well acquainted with the *political economy* of the Chinese, and he has their manners and customs at his finger ends. He never heard of Confucius, but he has heard that the Chinese give great attention to the cultivation of the soil; and he says that our children must know the importance of having every bit of land cultivated. To this end he thinks that the Ragged-school boy ought to have a smattering of science; nothing like science; he is himself a scientific man, well known in the scientific world; one, in fact, who "sips popular science with each hasty meal." . . . . . . If we take lessons from the Chinese in the preparation of manures, is it impossible—with all our enlightenment—that we may yet do so in another respect; *i. e.* apply the bamboo liberally to our juvenile offenders? . . . . .

We have just been visited by an itinerant astrologer, who casts a horoscope for a halfpenny, and a lucky hit he has made for making money. In the course of the afternoon he must have cleared a pound, from the numbers who flocked to him to have their fortunes told. He performed some manœuvres (with a doll which he had in a glass bottle) on the receipt of each halfpenny, and the applicant for this cheap glimpse into the future was then handed a little printed paper, from which I extract:—

"Capricorn and Saturn.—Beware of those who flatter you; it is only to deceive you; you are so honest that you will believe every one to be like. Your great confidence will render you the dupe of some bad persons, but their triumph will not be long. They will rob you of something, but you will soon find it again.

"Fate will be favourable to you, because you have no ambition. You will never be rich, but you will never feel the needle of misery.

"You have a project that you will not put in execution for a certain time, and not then without great trouble; but your enterprises will be crowned with success.

"Learn, if thou art sage,
Science sooner than Heritage;
When Heritage fails thee,
Science will nourish thee.

"N.B. Secret Looking-glasses; to show the Ladies their future Husbands, and the Gentlemen their future Wives."

This paper was endorsed in pencil "No troble,"—meaning, probably, that its fortunate possessor should get through the world without *trouble*. . . . .

A man came to me this morning in a state of actual starvation: he slept all night on a stair, and the woman who found him there gave him a cup of coffee. For this act of "charity" on her part, she made a claim on me for some "tea and sugar," for *sure* the man was a *stranger* to her, a *Greek*, in whom she had no interest. It is not many years since she was a Greek herself; but this is always the way with them. They will joke, and gossip, and drink, and weep, and laugh together; nay, they will live in charity together, that is, in such *charity* as has nothing to do with the giving of alms; but they rarely give food to each other. Why should they? The Saxon is their milch cow—patent to them—and yields, I am sorry to say, much too freely. This man is only a few weeks out of an Irish union workhouse. Tears, real tears, which are fearful things to see scalding a man's cheek —unless, indeed, he be a good hater, and weeps out of spite—fell from his eyes as he spoke of his wife and children in Ireland. He said that he would never see them again. Sights like these are too frequent. I have become so hardened, they do not affect me now. The astrologer brought this one to my mind again, from the circumstance that he stood on the very spot this evening where the poor homeless Irishman stood this morning, packing away some bread which I gave him—a more humbling sight I never saw. The wretched being had neither a pocket nor a handkerchief to cover the loaf that he could not devour; at last, he began to stuff the bread under his waistcoat, which was his only outer garment. I turned from this sight dejected. . . . .

This warm weather is unfavourable to the morality as well as to the health of our alley. Got into trouble with some of the parents because I recommended the boys to bathe. Did I wish to drown'd the childer? Meals more regular than in winter—more money amongst them and more vice. Men taking it easy Saw the Jesuit—fright of the boys. Sent the lad with the aristocratic name to the workhouse. The "Happy Man," who keeps the laundry, denies that he ever saw the youth before; but he *does know slightly* the genius who made a lucifer match that would *eggitate* although steeped in water for six months. Old Joe —— (who wears a long white beard) brought home eleven shillings in coppers, the produce of one day's begging. Visited the "Beggars' Hotel" last night, to look for ——. Lodgers smoking and drinking, one of them (who has huge whiskers) declared that her Majesty's ministers were "impostors," because "they did not take the dooty off barley." Misthress —— has got up a female smoking club at the jerry shop; she has spent her week's wages on this undertaking, and I was obliged to provide her only son with a pair of trousers, otherwise he would have been obliged to keep his bed. A city missionary tells me that he thinks he is doing some good amongst these people. Had a long conversation with a Jesuit missionary; he knows that the Irish in London are in want of "priests and discipline," and that Ireland would be a charming island were it not for a thing or two. For the first time I heard the Bible Society named as one of the evils of Ireland, and I heard also that England would yet be spiritually saved by Irish immigration! . . . . . .

The religion of these Irish has degenerated into a vague superstition; it is nothing but a fear of some unknown evil that their confessor has the power to mitigate or remove. They recognise his personal influence before his face; when he is not present they scoff. I have fancied that they have a license to do so, that they may deceive. . . . .

A mild sentence has been passed on ——; I fully expected that he would have been capitally convicted. The creatures of impulse are these poor Irish, and they must be indulged! . . . .

But I am no advocate for capital punishment, at least I ought not to be, for I know that it does not deter from crime, and that it carries no dreadful associations with it amongst portions of the lower classes. I recollect very well that, the day the Mannings were executed, a stray bull-dog was hanged in our court: and the day following, so agreeable was the spectacle, the same party of boys killed two dogs. . . . . Such a society as exists in many Irish districts about London, cannot be improved by the missionary, or the schoolmaster, until these districts are dispersed or broken up into smaller portions. The carpenter, and the bricklayer, and the men who pull down old houses should lead off the crusade.

OBSERVATIONS ON LANGUAGE.

Some of the most laboriously devised and ingenious instruments present, when they are perfected, a simplicity of appearance, which excludes from view the difficulty of their invention, and diminishes the admiration they deserve. Simplicity of result is often the principal excellence of an invention and the chief glory of the inventor; and experience in the pursuit of some ingenious aim can best enable one to appreciate the difficulties out of which scientific simplicity is very frequently evolved.

Now, language is an instrument whose simplicity is its greatest wonder. That by a few elementary sounds or characters, variously combined, we are enabled to receive and to communicate impressions of every variety of thought and feeling, is a circumstance which, the more attentively it is pondered, will the more forcibly excite astonishment, and dispose us, if not to agree with, at least to make the greater allowance for, those theorists who have ascribed the origin of even alphabetical writing to the inspiration of Heaven.

"The tongue is a little member, and boasteth great things." How amply has the history of the world verified that declaration! How numerous are the illustrations to be found of its meaning and truth! Language is an instrument that has achieved results infinitely surpassing in magnitude and importance the effects of nature's mute productions. The majestic heavings of the ocean and the gentle flow of the streamlet, the rolling echoes of the thunder-peal and the small, sweet voices of the tuneful grove, the towering sublimity of mountains and the modest beauty of flower-clad plains—have not these been found mere emblems of what language may realize, when eloquence has made appeal to human passions, when the tongue or the pen has been employed to express what the human imagination can conceive, or the human heart can feel. It is true that in words themselves there is mere breath, and that the question, "What's in a name?" justly demands the admission, that a name, in its natural character, is powerless; but, also, it is true that such influence may be wielded through the instrumentality of words, as to make a name the source of mighty consequences:—

"As on the morn, to distant glory dear,
When Marathon became a magic word,
Which uttered, to the hearer's eye appear
The camp, the host, the fight, the conqueror's career."

We are too familiar with language to be qualified for the due appreciation of its wondrousness as an instrument. The poet Cowper has said of the works of nature—

> "All we behold is miracle; but, seen
> So duly, all is miracle in vain."

And in language there appears, when its structure and capability are well examined, a character so nearly miraculous, that many critics have felt constrained to ascribe to it a Divine origin.

Whatever amount of Divine assistance, towards the formation of spoken language, may have been given to man, it appears that originally many words were such as human ingenuity might readily devise. There are in our own language a multitude of terms which are more natural than arbitrary, and which lead us to suppose that the earliest words were names imitative of sounds uttered by the various voices of nature. The name which denoted a particular bird may have been an echo of the animal's accustomed utterance, and the same name may have been afterwards transferred to other birds of similar appearance, though variously differing from the former in their note or cry. The appellation originally suggested by the dashing torrent may have echoed the wild rush of its waters, and the same appellation may have been subsequently applied to the waters of a placid lake, thus denoting an object of sight by a term which was originally moulded in the ear. In some such way as this, words originally conforming in sound to sense, may have undergone conversion to that arbitrary state from which all connexion between sound and sense has disappeared. There are, indeed, in our language some words which, individually, apply to so many different notions, that though the transition from the first use to the second has been occasioned by some feature of resemblance, and from the second to the third by some other similarity, and so forth; yet it is impossible to give any general definition of the term, because all likeness between the first and the last applications has disappeared.

We might easily, however, accumulate instances in our own language of the preservation of a natural resemblance between words denoting some sort of sound, and that sound itself. How like to the things signified are the words ***crash***, ***whisper***, ***rough***, ***skip***, ***howl***; such words are undoubtedly imitations of nature; they exemplify a correspondence of sound with sense; they echo their meaning; and they form, on this account, a very expressive portion of our language. Poets have not unfrequently invested their thoughts with a powerful charm by bringing together, for the expression of these thoughts, such sounds as speak to Imagination's ear, and enable us to realize vividly the subject of description, to listen rather to things, than to words suggesting those things.

On the accommodation of sound to sense, Pope has given poets direction, in lines that ingeniously exemplify the very thing he advocates:—

> "'Tis not enough no harshness gives offence,
> The sound should seem an echo to the sense.
> Soft is the strain when zephyr gently blows,
> And the smooth stream in smoother numbers flows.
> But, when loud surges lash the sounding shore,
> The hoarse, rough verse should like the torrent roar."

We suppose, then, that spoken language has been partly formed by an imitation of the sounds of external nature; and probably it has been so formed in much greater proportion than the present signification of words enables us to perceive. But we have now to deal with words chiefly as arbitrary signs, with whose meaning we become familiar through that relative suggestion which arises out of long-repeated applications of them to particular ideas. There is nothing in the sound of the word *man* naturally suggestive of its meaning; and the same may be asserted of almost all those terms, through the medium of which we enable others to conceive, and ourselves to recall, those ideas we have entertained in our minds.

But what a wonderful system is that of articulation, by which human speech is distinguished! "The inferior animals are enabled to utter instinctive but inarticulate sounds in order to express what they feel. These, however, are not sufficiently numerous and precise to suit the necessities of a rational nature; and hence man has been enabled to form an immense variety of artificial expressions, whereby he can make known to others his various sentiments and conceptions. But extensive as that variety is, the differing elementary sounds of which it is constituted are remarkably few. In our own language and others, they might, indeed, be a little more numerous than we find them."* All our perfect or vowel sounds are only some examples of what might have been included in our vowel system; the French, the German, and some other languages have vowel sounds which are not employed in English. We might also have had more consonantal sounds than we possess, of which the guttural sound of *g* in some languages is an example. But there is no necessity that all the variations of sound practicable by our vocal organs should be exemplified in our language. There is rich enough variety in our vowel sounds, and also in those consonantal sounds which form the joints or articulations between vowel and vowel. By the tongue, the lips, the teeth, and other organs of pronunciation, our speech is distinguished from the inarticulate utterance of the inferior animals, and comprehends a variety which, like the stops of a musical instrument, delights the ear and moulds itself into the expression of every thought and emotion. Shall we forget the great Author of this wondrous capacity?—the great Father of Lights from whom this good gift has come down? Shall we, through speech, dishonour our Creator, and not rather glorify him, by using the precious gift, as he designed, for the communication of knowledge or happiness to our fellow-men, letting "no corrupt communication proceed out of our mouths, but rather that which is good to the use of edifying?"

We have said that some philosophers have expressed their persuasion that man was taught spoken language by the Creator; and that also it has been argued that we owe to the same Divine source the system of alphabetic writing,—that man could never, by his own ingenuity, arrive at the formation of visible language by words composed of alphabetic characters. We will not go into the question, whether it is to human contrivance, or to Divine revelation, that the literal notation is to be ascribed. But whichever be the conclusion we come to upon this point, the history of the human race certainly presents instances of tribes who had lost, if they ever before possessed, the knowledge of alphabetic writing, and who eventually arrived at that mode of expressing their thoughts after successive improvements on less expedient contrivances. There are four principal stages in this progress. It was natural that at first our imitative species should attempt to draw likenesses of objects, for the communication of ideas; that, for instance, the traveller who had encountered a savage animal on his way, should represent by some rude picture the form of the animal, so as either to make known what had been his own peril, or to warn others of the danger. Similar was the procedure of the Mexicans when their country was first invaded by the Spaniards. They had no knowledge of letters, but they sketched with some colouring material the figures of the Spanish ships, and carried the rude picture to their prince, Montezuma, who learned from that, and from signs of alarm, the necessity of preparation to withstand the foe. Now, from such a stage of skill as this, the pictorial art might have been carried to successive degrees of improvement, till it came to represent the foliage that seems to wave, the stream that appears to have transparent depth and onward flow; the portrait that seems to breathe, and think, and recognise the spectator. But when we talk of "breathing busts" and "speaking likenesses," we use an exaggeration which implies a necessary, a natural incapability in the pictorial art. The more that art might be improved, the less practicable it would become as a means of communicating the information which man's necessities hourly demand.

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* *Hunter's* English Grammar, p. 1.

Picture writing, therefore, which is the first stage of invention, was in process of time, improved upon by the employment of hieroglyphic symbols, which marks the second stage. The Egyptian hieroglyphics, or sacred delineations, as the word signifies (for these signs were at first chiefly employed in expressing religious notions), consisted in making the principal circumstance of a scene or transaction stand for the whole, as the figure of a scaling-ladder to denote a siege; or in making one thing stand for another, to which it was imagined to bear some resemblance, as in representing the universe by a serpent in a circle, the animal's variegated spots denoting the stars.

A third stage of progress, in the formation of visible language, is marked by the abridgment of hieroglyphic symbols, and the conversion of them into arbitrary marks, every idea having its appropriate sign. This was a great launch of the human intellect into an ocean of abstraction, on which memory had the task of preserving and directing thought, and of learning her way by the remote lights that first indicated the associations of words and things. Cumbrous, indeed, is the expedient of denoting every idea by a distinct arbitrary character; and the Chinese, who have carried that expedient to the greatest perfection, exhibit in their 80,000 verbal characters a vast amount of disadvantage when compared with European nations; but when we compare their system with the pictorial and the figurative symbols of ancient Egypt, we behold a mighty improvement made in the means of facilitating human intercourse, and promoting human happiness.

But the last stage of supposed progress marks the utmost perfection of which visible language is susceptible. The analysis of sounds, and the representation of each elementary sound by a letter, is one of the greatest triumphs of human ingenuity. For the number of elementary sounds is very small, yet the fruitful expedient of permutation applied to the corresponding small number of literal forms, produces that immense assemblage of words, in which thoughts of every description can find appropriate expression. Feelings and conceptions that, when originated in our souls, might pass away into traceless oblivion, are, as it were, caught by "the pen of the ready writer" and enstamped with permanence. They come forth from the human spirit as unguarded and volatile things, till alphabetic symbols form around them in plastic adaptation, and become an image wherein the ideas reside as an animating intelligence; and thus, what proceeded from the inner man may return to him through the avenue of sense, to be again disposed of as the conceived importance of the thoughts may require; or they may excite in another's mind ideas which amplify, or otherwise improve his stock of knowledge. Similar in some measure, to the scheme of expressing the infinite variety of numerical values by means of ten elementary symbols called figures, is the expedient of representing the infinite variety of human notions by means of twenty-six elementary characters called letters. The principle of construction in each of them is productive of endless variation; and in our own language upwards of 50,000 terms are the actual offspring of our few alphabetic elements.

In what we have thus stated respecting the formation of legible language, we have not designed to express our own thorough conviction that man was left entirely to his own devices to work out for himself the means of conveniently recording his thoughts. We see not enough of positive indication in history for the settlement of one's mind on that subject. But we have referred to different states in which the art of conveying thought to the eye has been found subsisting—states of which the respective merits are related to each other in the order in which we have introduced them as a supposed series of successive improvements, and which, when so exhibited, are, we think, well calculated to impress us with a proper sense of the simplicity, the beauty, and the value, of alphabetic notation. If man was left to himself in this matter, we know that society could not have long subsisted without attempts being made to preserve, by some species of visible signatures, the recollection of transitory objects.

Picture-writing would most naturally become, at an early period, a method of recording information; and then, when imagination grew familiar with the analogies between things material and intellectual,—between outward manifestations and inward qualities, the hieroglyphic art would produce its representative forms, its fanciful emblems of actions and dispositions, of virtue and vice, of events and prospects; then, the expediency of abbreviating hieroglyphic symbols, and a consequent tendency to do so, would lead, by gradual approximation, to the employment of a few alphabetic signs, in which scarcely a trace of hieroglyphic resemblance was allowed to linger, and which, being thus set free from special and invariable significancy, might readily furnish a mould for every species of intellectual conception. J. H.

(To be continued.)

ON THE DUTY OF COMBINING INDUSTRIAL WITH RELIGIOUS AND OTHER INSTRUCTION IN THE EDUCATION OF THE POOR.

THE propriety of beginning at an early age to train the young for the particular callings which they are most likely to follow in after-life, is obvious. The son, who in childhood has lived where his father's trade was carried on, and been in the habit of taking part in it, is generally observed, when he adopts it as his own, to be possessed of almost intuitive knowledge in it, and of marked superiority to those who have not been thus, as it were, bred to it. Hence, doubtless, arose the custom, still found in some eastern nations, of whole families and tribes, from generation to generation, confining themselves to particular employments; and thus, too, they became celebrated for their success in them. Such being the case, the question naturally arises, especially with reference to the poor, whether anything can be done in their school education which may tend in some degree to fit them for their labours in after-life, and increase their usefulness in their respective occupations. That this must be possible, most people will be ready to admit. Hitherto the main, if not the only obstacle, to actual attempts in this direction, has probably been the not knowing how to begin. But this obstacle seems now in a fair way of being effectually removed by the institution of schools, organized with a view to industrial instruction, and by the publication of a series of Manuals of Industry for use in such schools.

Of the schools thus established, and called National and Industrial, those at Finchley particularly deserve notice; and it is intended to give an account of them in a future number of this Journal. It may suffice here to say, with reference to them, that the industrial system adopted in them has worked to the satisfaction of all concerned. The boys' gardens have been most productive; and in the girls' department the washing and cooking have been most satisfactory.

Of the Manuals of Industry above alluded to, two have already appeared, which have been published under the title of "The Finchley Manuals," and in connection with the schools there. Of these, the first, upon Cooking, has been noticed in a former number of the Journal, and it is our intention to take an opportunity of noticing the second, upon Gardening. It is most to our present purpose to remark of them, that they are executed in such a manner as to leave no doubt of the practicability of combining industrial with other instruction in National and Middle Schools.

As, however, the practicability of readily giving such instruction in an effective manner, may, from its having been so long neglected, appear questionable to some, it may be proper, before proceeding to the immediate object of the present paper, to say something upon this head. This, perhaps, will be best done by a short reference to the "Finchley Manual" upon Cooking, with some extracts from it. The information given in the Manual is first put in the form of general directions, and then applied to particular objects, in the shape of question and answer; and it is recommended that the principal questions and answers should be committed to memory. Thus, as a specimen, under the head of Roasting, there are these general directions :—

"It is desirable for the young Cook to know, that meat, especially beef and mutton, to be tender, should be hung some time before it is roasted. In winter, the air being fresh and clear, it will be the better for hanging a week or more; in summer, according to the state of the weather, two, three, or four days may suffice. But, if hung too long, it will lose both flavour and juice.

"In small families, or for small joints, a *bottle-jack* is the best apparatus for roasting with; but in the absence of a bottle-jack, a small hank of common worsted (or even a strong piece of string) will be found an economical substitute. Suspend the meat from the worsted, or string, and twist it round now and then as may be required.

"When a spit is used, let it be carefully wiped before it is passed through the meat, or it will leave a black stain. The spit must not be run through the prime parts: in such joints as necks, &c., it may enter two bones from the end, and run up the back till it reaches nearly the other end. Thus the prime of the meat will not be pierced.

"As a general rule, it takes about the same length of time to roast a joint as to boil it; that is, a quarter of an hour to a pound; but, if the joint be thick, rather more time must be given. Allowance must also be made for the strength of the fire, the heat or coldness of the weather, &c. *Beef* and *mutton* are the better for being rather *underdone* than *overdone;* unless the family prefer it the contrary. But *pork, veal,* and *lamb* should be *thoroughly* roasted; otherwise, they are difficult of digestion, and unwholesome. All *young* meat requires more roasting than *old.*

"In roasting, the first point of attention is the *fire.* Make the fire in proportion to the size of the piece of meat you have to dress; that is, if it be a small or thin piece, make a small brisk fire, that it may be done nicely and quickly; but, if the joint be large, the fire must be proportionately so. The fire must always be kept clear at the bottom.

"The state of the fire should be carefully looked to half-an-hour before putting the meat down, as there should always be *a good strong fire to begin with.*

"At first meat should be placed at a good distance from the fire, and be gradually brought nearer as the inner part becomes hot. By this means it will not be scorched.

"Do not put salt on meat before it is laid to the fire, as salt draws out the gravy.

"The joints of all necks and loins should be *nicked,* or chopped *half-through,* with a cleaver, before they are put to the fire; otherwise, it will be difficult to separate the bones afterwards, when in a dish, on the table.

"Large joints of beef, or of mutton, and always veal, should have a piece of writing-paper placed over the fat, to preserve it from being scorched.

"When the meat is nearly done, which may be seen by jets of steam or smoke drawing towards the fire, let the paper be removed, and baste the meat well.

"Meat in general requires much basting. A good method is, to put a little salt and water into the dripping-pan, and baste for a short time with it before using the meat's own fat or dripping.

"Having basted the meat well with its own fat, after the removal of the paper, dredge it slightly with flour to give it a frothy appearance. Then sprinkle it with salt, which will greatly improve the flavour of the meat, and cause the gravy to flow on cutting.

"The dripping must be strained off clear, and put away for frying with."

Then follows a catechetical application of these general directions to the roasting of ribs or sirloin of beef:—

"Q. Have you attended to the *General Directions for Roasting?*

"A. Yes, Ma'am.

"Q. Then you must make up your fire to roast this piece of beef. It weighs *sixteen pounds:* what time will it require to cook?

"A. From three hours and a half to four hours.

"Q. How do you manage your fire?

"A. From the size of the joint, I must have a clear and rather strong fire, and at first I must place the meat at a considerable distance, or the outside will get dry and scorched before the inside can be warmed through.

"Q. Do you put any salt on your meat before you lay it to the fire?

"A. No, Ma'am; that would draw out the gravy, and make the meat dry.

"Q. How do you prevent the fat from scorching or burning?

"A. I must have a piece of writing-paper to place before it.

"Q. How will you know when the meat is nearly done?

"A. By the smoke or steam proceeding from it towards the fire.

"Q. When that is the case, what do you do next?

"A. I must remove the writing-paper, and baste the meat well with its dripping.

"Q. Do you not baste it before that?

"A. Yes, Ma'am. At first, I put a little salt and water into the dripping-pan, and baste it for a short time with that.

"Q. When you have removed the writing-paper from before the fat, and basted the meat well with its dripping, what do you do next?

"A. I dredge it slightly with flour.

"Q. What is that for?

"A. To make it look nice and frothy.

"Q. Do you do anything more?

"A. A few minutes before I take the meat up, I sprinkle a little salt over it.

"Q. For what purpose?

"A. The salt improves the flavour of the meat, and makes the gravy flow when it is cut.

"Q. What vegetables do you serve with roast beef?

"A. Potatoes; and very often greens in addition.

"Q. Anything else?

"A. It is usual to garnish the dish with scraped horse-radish; some of which should also be served in one or two very small dishes or plates."

It seems hardly possible to read the above without perceiving how much a young girl may learn from instruction thus given in the art of cooking; if there be but a moderate degree of attention on her part, and the least judgment on the part of the schoolmistress. And it is plain that this must apply equally to other departments of cooking, and to other industrial acts, such as housework, needlework, and so forth. The main distinction between this Manual and other works on Cookery is the minuteness of the directions, and simple and plain manner in which they are given, and the natural and interesting method in which instruction is conveyed. Thus much, then, may be enough to show that it is practicable to give such industrial instruction in schools for the poor as may greatly tend to promote the usefulness and success of the children in after-life.

The duty of giving such instruction, and of combining it with the acquirement of religious and other knowledge, remains now to be spoken of, and is, indeed, the main object of the present paper. And here, at the outset, the preface of the "Finchley Manual," must be referred to for a short, but very able statement of the evils which at present exist, in consequence of the neglect of such instruction in the generality of schools for the poor :—

> "The general inefficiency of young female servants, and not unfrequently of elder ones, has long been a subject of complaint in families of the middle classes of society. What is the radical cause of this complaint? Ignorance, want of *practical training*, i. e., a want of education on a right principle.
>
> "'Young women,' observes a mistress, 'offer themselves for household service, without possessing the slightest knowledge of their business. They profess themselves competent to do this thing, and that, and the other, while, in reality, they can neither cook, nor wash, nor scour, nor sew, nor do the most ordinary work of any sort. Pretending to *everything*, they can do *nothing*—literally nothing, as it ought to be done—without a long and tiresome course of training on the part of the mistress.'
>
> "And, let it be remarked, it is not every mistress who may be qualified, by leisure, inclination, or attainments, for such a course of *constant* superintendence.
>
> "What are the consequences of all this? Perpetual discomfort and annoyance in families, with incessant change of servants.
>
> "If ignorance in servants, and their want of practical instruction and education in the performance of household duties, produce these evils in the families by whom they are engaged, how much more pernicious are their consequences, when they themselves become wives and mothers? Without a clean, active, industrious, intelligent, economical wife, what is the *poor man's home*—what is the home of his children? A den of filth and misery. Without a suitable companion to render his cottage or his apartments attractive for himself and his children, the husband and father too often is led to resort for what he looks for in vain at home, *solace*, to the beer-shop or the gin-shop, where he dissolutely and injuriously expends, in a single evening, a larger portion of his hardly-earned wages than would suffice for the decent and comfortable sustenance of himself and all his family (at home) for half a week.
>
> "And this is the result of ignorance—of ignorance and *want of method* on the part of the woman—of ignorance, the bane of all happiness and virtue."

Who can read these observations without assenting to their truth? And if they are true, and if such evils can in any degree be removed or lessened by the introduction of proper industrial instruction into our schools, is not the conclusion irresistible, that it is the positive duty of those who have the control and management of our middle and national schools, to take immediate steps to introduce into them, as speedily as may be, thorough and practical instruction in the household duties of humble life? If such instruction can at the same time be combined with religious training, it is plain how subservient it might be made towards raising the domestic, moral, and religious character, and that thus, as expressed in the preface just quoted, the children "will become more alive to their own respect, and more careful to gain the respect of others: they will be better servants, better wives, better mothers, and infinitely more valuable members of society." The following directions, as to very ordinary duties, show in a very encouraging and simple manner how easily this may be attempted, with, under God's blessing, a fair prospect of producing a lasting impression:—

"RULES FOR THE KITCHEN.

Do every thing at its proper time.
Keep every thing to its proper use.
Put every thing in its proper place.
Use every thing in a proper manner."

"IT IS YOUR DUTY TO BE

Up early. Prov. xx. 13.
Diligent at your work. Prov. xviii. 9.
Careful and not to waste. John vi. 12.
Obedient to your superiors. Col. iii. 22, 23.
Clean in your person and neat in your dress. 1 Pet. iii. 3, 4.
Respectful in your manners. Titus ii. 9.
Kind to your fellow-servants. Gal. vi. 2, and Ephes. iv. 32.
Civil to all. Matt. vii. 12."

Really the bare perusal of these extracts seems better calculated, than any laboured argument, to bring home to the understanding and the heart the duty of trying to train children whilst at school in the skilful, and, we would add, religious practice of those acts of labour, and habits of action, which will contribute so greatly to their future usefulness and happiness.

If arguments were needed, it would be easy to show how much such instruction in works of industry would do towards removing the reproach, now unhappily not without cause, cast upon schools for the poor, that they are of little or no use in forming servants; that good servants are now more rare than formerly; that they are less industrious and respectful, and more apt to give themselves airs, and to act inconsistently with their station, and to behave as if they knew more than those to whom it is their special duty to order themselves lowly and reverently. It is plain, that such reproach must have some foundation in fact, so long as works of industry do not form a part of the instruction given in National Schools. For, in the case of many poor children, if they did not go to school, they would of necessity be daily occupied at home in assisting their parents in housework, in nursing their younger brothers and sisters, and in other industrial acts. Where, then, no works of industry are taught in the school, the time spent there will often be so much actually taken from the practical following of industrial acts at home. When such work must be done at once, and the child is not at home to do it, it must be done by the parent. Hence the child will lose many opportunities of doing such acts, and of thus becoming handy and experienced in doing them; and so, when the time of leaving school in order to go to service arrives, the young person will be less handy at work, and probably less inclined to do it, than if never at school. The more progress the child has made in book-learning at school, the less disposed probably will it be to submit to the drudgery of hard work, and the more likely to show this in the intercourse which takes place between masters and servants, especially in the lower division of the middle classes. Now, what more natural for a master or mistress, when a young person, clever in other respects, is found clumsy or ignorant in some necessary part of housework, to exclaim, "Why, these schools, instead of fitting young people for the stations in which

God has placed them, only spoil them, and make them fit for nothing!" Nor does it seem easy to answer such an objection, except by combining systematic instruction in works of industry with the inculcation of religious and other knowledge. Thus the minds of the young may be early made familiar with the connection that really exists between the service of God and the various duties owed to man. The girl will learn how to do her work, and how to be diligent and careful in doing it, as well as that it is her duty so to be; and to use her knowledge with modesty and respect for those whom God has chosen to put above her as her betters. The boy, in like manner, whilst he learns how to cultivate the soil, the nature and properties of different soils, and the best modes of sowing and planting different seeds and roots, will be actually led by a religious teacher to look through what he sees around him up to nature's God. And if, in consequence of such instruction, less time can be devoted to reading and writing, still, in the end, the introduction of industrial training will be found to promote rather than impede progress in other kinds of learning. For it will do more than anything else to prevent what has hitherto proved the greatest obstacle to progress in school knowledge—the early removal of children from school, and that just at the age when teaching has the most lasting effect, and when, without the protection and guidance of school instructors, children are most likely to fall into bad habits. When parents observe that, by leaving their children longer at school for instruction in works of industry, they become better servants, more fit for labour, and skilful in cooking, and housework, and needlework, handy when at home, and sure of better wages when they go out to service,—when parents see such to be the fruits of keeping their children longer at school, they will do their utmost to keep them there as long as it is good for them to remain.

Other arguments to enforce the duty of combining industrial with other instruction in the education of the poor suggest themselves, but our limits will not admit of their being noticed at present. We will only add, that we are glad to hear that inspectors of schools have already made industrial instruction one of the subjects with reference to which they examine the scholars as well as the masters and mistresses of our National Schools.

GENERAL EXAMINATION OF CANDIDATES FOR CERTIFICATES OF MERIT.

EASTER, 1850.

Masters.

GEOGRAPHY.

SECTION I.

1. GIVE the names of three counties in Scotland and of their chief towns; and of three in Ireland.

2. Draw a map of the county in which you reside, showing its chief towns, its principal roads, its river courses, and its water-shed.

SECTION II.

1. Draw a map of Galilee, showing particularly the situations of Capernaum, Tiberias, Cana, Nazareth, Nain.

2. Draw a map of Jerusalem, showing the situations of Mounts Zion, Moriah, Acra, of Olives and Olivet, and of the valleys of Hinnom and Jehoshaphat.

SECTION III.

1. What are the provinces of British India?

2. What are the independent states of South America? Give some account of the physical Geography of one of these countries.

SECTION IV.

1. What are the principal divisions of Germany?

2. Draw a map of Northern Italy.

SECTION V.

1. Account for land and sea breezes.

2. Account for the trade winds and for the prevalence in high latitudes of winds in opposite directions to the trade winds. What is the character of the winds within 2° on either side of the equator?

SECTION VI.

1. More rain falls on the Eastern, than on the Western Coast of Great Britain. Account for this.

2. Why does abundance of rain fall on the slope of a range of mountains which intercepts a prevalent wind?

POPULAR ASTRONOMY.

SECTION I.

1. Give one reason, and that the simplest, for believing, 1st, that the earth's surface is not an infinitely extended plain as it seems to be. 2nd, That the sun and stars do not revolve round us every 24 hours as they seem to do.

2. How is it known that the stars are very greatly more distant from us than the sun, moon, and planets?

SECTION II.

1. What changes would a person observe in the appearance of the heavens who watched them carefully all night?

2. Explain the phases of the moon. Why are similar changes observed in the planet Venus?

SECTION III.

1. Why are the lengths of the days and nights different at different seasons of the year? Explain this by means of a diagram.

2. Why are the planets Mercury and Venus always evening or morning stars? On what causes do the variations of brightness in the planet Venus depend?

SECTION IV.

1. Explain a method of finding the latitude by means of a meridian altitude of the sun and apply it to an example.

2. To obtain the true from an observed altitude of a heavenly body, the latter must be corrected for Parallax and Refraction; explain what these are.

HISTORY.

SECTION I.

1. Particularize, as far as you are able, the share of the Conquest of Britain due to different Roman Generals.

2. State plainly the claims of Stephen and Henry II. to the throne of England, and the leading features of the contest between their parties.

3. Enumerate the various possessions of England in France under William the Conqueror, Henry II., and Henry VI., and show how they were respectively acquired.

SECTION II.

1. Give a short account of the Conquest of Wales by Edward I.

2. State the chief provisions of the "Constitutions of Clarendon."

3. Prove by instances the progress of the English people in civilization and refinement from the reign of Henry II. to that of Elizabeth.

SECTION III.

1. Sketch the character of Henry VII. as a king.

2. Describe the death of Cranmer.

3. Was the execution of Charles I. in conformity with the laws of England?

SECTION IV.

1. Mention the chief feature of the foreign policy of England under the first two sovereigns of the House of Brunswick.

2. Contrast William Pitt and Charles Fox.

3. Describe the origin, and, as far as you are able, the progress and present condition of the cotton manufacture in England.

SECTION V.

1. Give some account of the Phœnicians, mentioning also their chief cities and most celebrated colonies.

2. State briefly, and with dates, some of the most striking events in the war between Octavius and Anthony.

3. Of what countries did the Empire of Charlemagne consist? Describe his character shortly, and name some of his most celebrated contemporaries.

SECTION VI.

1. Give a short account of Peter the Great, of Russia.

2. Describe the rise, and trace to its present position, the Order of Jesuits.

3. Show, as far as you are able, the effects produced on the powers of Europe by the discovery and colonization of America.

GEOMETRY.

SECTION I.

1. The angles which one straight line makes with another upon one side of it, are either two right angles, or are together equal to two right angles.

2. If one side of a triangle be produced, the exterior angle is greater than either of the interior opposite angles.

3. If two triangles have two sides of the one equal to two sides of the other, each to each, but the angle contained by the two sides of one of them greater than the angle contained by the two sides equal to them, of the other; the base of that which has the greater angle shall be greater than the base of the other.

SECTION II.

1. If a straight line falling upon two other straight lines, make the exterior angle equal to the interior and opposite upon the same side of the line; or make the interior angles upon the same side together equal to two right angles: the two straight lines shall be parallel to one another.

2. If one side of a triangle be produced, the exterior angle is equal to the two interior and opposite angles; and the three interior angles of every triangle are together equal to two right angles.

3. If the square described upon one of the sides of a triangle be equal to the squares described upon the other two sides of it; the angle contained by these two sides is a right angle.

SECTION III.

1. If a straight line be divided into any two parts, the rectangles contained by the whole and each of the parts, are together equal to the square of the whole line.

2. If a right line be bisected, and produced to any point; the rectangle contained by the whole line thus produced, and the part of it produced, together with the square of half the line bisected, is equal to the square of the straight line which is made up of the half and the part produced.

3. In obtuse-angled triangles, if a perpendicular be drawn from either of the acute angles to the opposite side produced, the square of the side subtending the obtuse angle is greater than the squares of the sides containing the obtuse angle, by twice the rectangle contained by that side upon which when produced, the perpendicular falls, and the straight line intercepted without the triangle between the perpendicular and the obtuse angle.

SECTION IV.

1. If two circles cut each other they shall not have the same centre.

2. In equal circles, the angles which stand upon equal circumferences are equal to one another, whether they be at the centre or circumference.

3. If two straight lines cut one another within a circle, the rectangle

contained by the segments of one of them, is equal to the rectangle contained by the segment of the other.

Section V.

1. If from a point without a circle there be drawn two straight lines, one of which cuts the circle and the other meets it; if the rectangle contained by the whole line which cuts the circle, and the part of it without the circle, be equal to the square of the line which meets it, the line which meets shall touch the circle.

2. To inscribe a circle in a given triangle.

3. If the angle of a triangle be divided into two equal angles, by a straight line which also cuts the base: the segments of the base shall have the same ratio which the other sides of the triangle have to one another: and conversely, if the segments of the base have the same ratio which the other sides of the triangle have to one another; the straight line drawn from the vertex to the point of section, divides the vertical angle into two equal angles.

Section VI.

1. The difference between any two sides of a triangle is less than the third side.

2. The chord of 60° is equal to the radius of the circle.

3. The square of the excess of one straight line above another is less than the squares of the two straight lines by twice their rectangle.

Mistresses.

GEOGRAPHY.

Section I.

1. What are the seaports on the southern coast of England?

2. What counties border on Hertfordshire?

Section II.

1. What are the Protestant countries of Europe?

2. Where are the following places situated:—Dresden, Trieste, Smyrna, Agra, Moulmein, Manilla, Bahia, Campechy, Havannah, Baltimore?

Section III.

1. Give the names of three counties in Scotland, and of their chief towns; and of three in Ireland.

2. Draw a map of the county in which you reside, showing its chief towns, its principal roads, its river courses, and its water-shed.

Section IV.

1. Draw a map of Galilee, showing particularly the situations of Capernaum, Tiberias, Cana, Nazareth, Nain.

2. Draw a map of Jerusalem, showing the situations of Mounts Zion,

Moriah, Acra, of Olives and Olivet, and of the valleys of Hinnom and Jehoshaphat.

SECTION V.

1. What are the provinces of British India?
2. What are the independent states of South America? Give some account of the physical Geography of one of these countries.

SECTION VI.

1. What are the principal divisions of Germany?
2. Draw a map of Northern Italy.

ENGLISH HISTORY AND BIOGRAPHY.

SECTION I.

1. Give a short account of Queen Boadicea.
2. Mention, with dates, the chief events in the reign of William Rufus.
3. Describe, as far as you are able, the different positions of women amongst the Ancient Britons, the Saxons, and the Normans.

SECTION II.

1. By what English King, and under what circumstances, were claims first made to power in Scotland?
2. Describe, shortly, the battle of Agincourt.
3. Relate, with dates, some circumstances of the introduction of printing into England.

SECTION III.

1. With what great event in our history is Anne Boleyn connected? Describe her rise and fall.
2. Give a brief account of Ridley or Latimer.
3. Sketch the domestic manners of the English under the Tudor Sovereigns.

SECTION IV.

1. State what you have read of Sir Walter Raleigh, and the circumstances of his death.
2. Mention instances of the tyranny and arbitrary conduct of King James II.
3. When, and under what circumstances, were the union of the Scotch with the English crown, and the legislative union of England and Scotland effected?

SECTION V.

1. Describe, with date, the South Sea scheme.
2. With what act of atrocious cruelty is the name of Tippoo Sultan connected? Describe it briefly.
3. Give a short sketch of the character of George III.

SECTION VI.

1. Write a biographical sketch of one of the following persons:—King Alfred, Wickliffe, John Hampden, John Milton, Sir Isaac Newton, or Baron Cuvier.

2. Name some of the most celebrated women of antiquity, and state, shortly, the causes of their celebrity.

3. Write a short memoir of the late Dowager Queen Adelaide.

ON TEACHING LATIN AND GREEK.

AMONG the various obstacles to the acquisition of a competent knowledge of the Greek and Latin languages, there is one that careful teachers can hardly fail to have observed—we mean the practice of teaching the two languages at the same time to very young boys. So far as the writer can judge, by his own experience and his inquiries, the Greek language is generally begun before boys have acquired a good knowledge of Latin. The practice is to begin Latin first—a practice for which there are sufficient reasons, though certain pretended reformers, whose love of novelty is stronger than their judgment, have sometimes recommended that Greek should be taught first. There are many answers to such a proposition, one of which is this:—There may be many boys who might stay at school long enough to learn either of the languages pretty well, but not both; and if a boy can only learn one of them, the language that he should learn is Latin, because it is more useful both directly and indirectly to most people to know Latin only than to know Greek only. Indeed, if we consider the age at which many boys leave school, we must admit that the Latin language is as much as they can be expected to acquire; for there is other knowledge still more directly useful that cannot be neglected.

The fact is, as the writer believes, that in our schools at present a great many boys begin Greek, which they learn for a year or two, and then leave school for business or some occupation. Now, for a boy to begin the study of Greek, or indeed of anything else, without prosecuting it until a competent knowledge is acquired, is a waste of time; for the very slight advantage that is got by knowing the Greek characters, and perhaps recollecting a few words, is not a sufficient equivalent for loss of time and the expense of books. But, so far as the writer has had opportunities of observing, all boys who have got a slight smattering of Greek, forget it entirely in a short time: they know as little of it as if they had never learned it. Perhaps there will be few followers of established usage bold enough to contend that there is any use in learning anything which makes so slight an impression on the mind as to be totally erased from it in a few years. That which is well learned at school is never entirely forgotten. The object of school teaching, in addition to the mental improvement which results from good teaching, is that a boy shall learn something which he shall always keep; if not in all the freshness of his school knowledge, at least in such a degree that he shall be able to use it to some extent. If this is not the object of school teaching, there is no object at all.

It would be a great improvement in our school systems if those boys who are not to be sent to any of our universities, or who are not intended for any profession in which a knowledge of Greek is necessary or supposed to be necessary, should not waste a part of the last few years which they spend at school in learning a very little Greek, often very badly taught, with a considerable expenditure of time and some expenditure of money. The time thus saved might be employed in perfecting their knowledge of Latin, of some modern language, of mathematics, and other things. A good course of school instruction should be such as to give a boy the power of prosecuting his studies, when he leaves school, if he feels any inclination; and if he should not feel the inclination, the fault is not the teacher's. He has done for the boy all that he can do. But a boy who is despatched from school with a consciousness that he has been labouring some time at something of which he has learned very little—Greek for instance—is not in the condition to continue his studies, even if he wishes; and not in the mood to be thankful in after life for labour imposed without corresponding advantage. Our private schools in which Latin and Greek are taught are only imitations of public schools, or grammar schools; and we may call all schools grammar schools, whether endowed schools or not, whose purpose is chiefly, but not solely, to prepare boys for the universities or for the learned professions. As Greek was once no part of grammar-school instruction—for there were grammar schools in England long before Greek was taught generally,—so there is now no reason why all boys should learn Greek, even in such schools as are mainly designed to prepare boys for the universities; for a great number of the boys at such schools do not go to the universities, and many of them not even to any of the learned professions. Some go into the army, some into the navy, some become general medical practitioners, some solicitors, some enter merchants' houses, and others engage in some of the various occupations or employments which have been multiplied so largely in modern times. Yet these boys should have a more complete education than those who are to be employed as shopkeepers, or as clerks, or in any of the numerous occupations for which a liberal, or, to speak more correctly, an expensive education is not required. For all boys, except the last-mentioned class, a good course of Latin teaching would be useful; and they generally stay at school long enough for that purpose, but not long enough to learn Latin well, if part of their time is to be employed in learning a little Greek also.

The objection to boys wasting their time on Greek, who have only time enough to learn Latin, applies chiefly to those who leave school at an earlier age than those who are designed for the universities. The objection is, that they should not waste their time on Greek: if they cannot give time enough to the language to learn it well, they should not commence it at all. The objection stated at the beginning of these remarks applies directly to those boys who are designed for the universities, and who must learn both Latin and Greek; and indirectly to those also who learn a little Greek to no purpose. For if Greek is begun so soon as to be an impediment and hinderance to those who must learn both, and who do continue their studies until they have learned both in some way or other, it is a still greater hinderance to those who have only time enough to learn Latin well, even if all the time that can be given to Latin were well employed; for they labour under the disadvantage of beginning Greek without having time to acquire it, and also of beginning it so early as to interfere with the acquisition of both Greek and Latin; which second objection applies equally to both classes of students, and shall now be briefly stated for the consideration of teachers who are not too prejudiced to listen to that for which reasons are given.

The Latin language, according to the present practice of our schools, is the first language which a boy really studies. It would be easy to give some elementary instruction on the forms of words and uses of words in the English language; but this is seldom done, and a boy gets his general knowledge of language through the medium of Latin. This part of his discipline should be sound and complete. His knowledge of the Latin should be considerable, before another language, at least another ancient language, is presented to him. It should not be confined to the learning of grammars, the writing of exercises, and the reading of scraps. He should be able to read well a good Latin prose author, and the easier Latin poets, before he begins Greek. He should have such a knowledge of the etymological structure of Latin words, of the forms of sentences and of all the ordinary expressions in the language, as to possess facility and readiness in them. No sentence should present to him any insuperable difficulty, unless it be a difficulty of matter which is above his years, or a difficulty of terms, the complete knowledge of which is only acquired by much reading and private study. So difficult is the Latin language, whatever people may think of it, that a sure foundation for its acquisition requires several years of good discipline, and at least one-half of the time devoted to teaching during such years. But a boy who has got some mastery over the Latin language by a good training has already accomplished a great deal. He has learned one ancient language, as far as a boy's capacity can acquire it; and the acquisition of the Greek is a comparatively easy affair. A boy of ordinary abilities and ordinary industry, who has learned Latin well, can learn Greek in one year, by devoting a couple of hours daily to it, in such way as to read Xenophon, or any easy Greek play; always supposing the teacher to give him assistance in difficulties. And in two years he will be able to read any Greek author with ease, always excepting difficulties of matter; and this without interfering with his still continued progress in the Latin language. No age can be fixed when all boys should begin Greek. Some may begin earlier than others. The age will depend on the progress which they have made in Latin. At present, young boys are strangely confused between the two languages. They are daily hurried from one language of which they know little to another of which they know less. Forms of words and constructions of sentences are jumbled in their heads in hopeless confusion, from which state of stupefaction some never recover, and others wake from it at last as from an ugly dream with the consciousness that they have been perplexed and puzzled most unnecessarily. If it were not the practice to put young boys into Greek so early, a man of sense would be startled at the proposal to embarrass a boy with two languages at once, before he has learned any language well; for that is the main point. When a man wishes to learn a new language, he has generally sense enough to confine himself to one at a time, until he has mastered it sufficiently. If there is good reason for a man doing this who has already acquired some exact knowledge of the nature of language, there is the more reason for it being done in the case of young boys who are learning Latin, and have yet acquired no exact knowledge of any language.

If a boy is badly taught, it is perhaps not very material whether he is badly taught both Latin and Greek at once, or Latin only; though it is certainly better that he should have one cause of confusion in his head at once, rather than two. But if a master is able and willing to teach well, it is at least worth his while to consider whether there is any truth in the reasons here urged for deferring the learning of Greek until a boy is somewhat better versed in the Latin language than he generally is, at present, when he begins Greek. If the reasons here urged are worth anything, the boy will learn both Latin and Greek better in a given time than he will if he begins Greek with a very imperfect knowledge of Latin.

ON LATIN ETYMOLOGY.

In the acquisition of a language, the most difficult and most repulsive task is the laying up in the memory a good stock of words. It has been long admitted that this process may be much simplified, and at the same time relieved of a large portion of its irksomeness, by a due attention to etymology; and accordingly more and more regard is being paid to this branch of linguistic science. But still the very dictionaries in which (so far as their prefatory promises announce) the necessity of etymological instruction is prominently stated, fail to furnish that systematic information which is required. At one time the lexicographer is satisfied by a mere approach to similarity in form, without making an attempt to explain the anomalies which render that similarity imperfect. At another time it is deemed sufficient to mention the ultimate root from which a polysyllabic word is derived, without any, the slightest, allusion to the several intermediate processes by which the word is successively built up to its full form. On the other hand, a very vague connection of meaning is commonly deemed sufficient to justify an alleged derivation.

For a study of verbal structure to produce abundant fruits, it is essential that the mind be carefully directed to an observance of the laws which regulate this as well as other departments of knowledge. When an inquirer has a word placed before him for analysis, he should be aware that the terminal letters of that word will nearly always guide him to a knowledge of the part of speech at least from which it has been deduced. If, with the aid of such suggestion, he succeed in finding the immediate parent of the proposed word, he has a shorter form to consider, the immediate origin of which will similarly be indicated by the syllable which has now become terminal. To take an easy example, the word *inenarrabiliter*, by its suffix *ter*, reminds us of such words as *breviter*, *graviter*, *celeriter*, &c., and as these all proceed from adjectives more or less like *tristi-* (nom. *tristis*), we infer, even though we may not have met with it, an adjective *inenarrabili-*. But the prefix *in*, when possessed of negative power, is only used in the formation of adjectives. It is therefore essential to cast it off before we proceed further, and this brings us to the simpler adjective *enarrabili-*, which compared with *volubili-*, *laetabili-*, *amabili-*, &c., suggests that *bili-* is an adjectival suffix attached to verbs; and as the latter examples are formed from the verbs *volv-*, *laeta-*, *ama-*, so the adjective under discussion flows from a verb, *enarra-*. The well-known prefix *e* being removed, leaves us the simpler verb *narra-*. Now a disyllabic verb is seldom if ever a primitive, and, when of the first conjugation, may commonly be referred to an adjective or substantive of the first or second declension, witness *dura-re*, *culpa-re*, *signa-re*, severally formed from *duro-*, *culpa-*, *signo-*; or if the nominatives be preferred, *durus*, *culpa*, *signum*. Our attention is thus pointed to the adjective *gnaro-* (nom. *gnarus*), and as Tacitus uses this adjective in a passive sense, "known," *gnarare* * might well signify "to make known or relate."

But *gnaro-* itself is not radical. The termination *ro* is exhibited in the adjectives *rubero-*, *pigero-*, *crebero-*, *avaro-* (nom. *ruber*, *piger*, *creber*, *avarus*); all of which are derived from verbs; and, accordingly, on making search for a verb which by its meaning will suit the adjective in question, we cannot but think of the syllable *gno* of *gnosco*, *gno-tus*, more commonly deprived of the initial *g*, just as our own root suffered the same loss in *narrare* for *gnarare*. The change from *o* to *a* is common in all languages, and is seen in the Latin verbs *aura-re*, *dura-re*, *signa-re* from nouns *auro-*, *duro-*, *signo-*. We have now arrived at a monosyllabic form *gno*, corresponding in form as well as sense to our own *know*. Yet even these are compounded words. As the English words *bellow*, *sparrow*, *minnow*, *hollow*, have in *ow*, a syllable foreign to the root, as seen in our *bell* (like a *bull*), now obsolete, *sper* of the German *sper-ling*, *min* signifying in so many words "little," and *hole*; so our verb *know* is itself a derivative from the all but obsolete verb *ken* or *con*. The Latin language, at first sight, is not possessed of a simple verb corresponding to our *ken*. But by the analogy which exists between the two tongues (as seen in *gen* of *genus*, Lat., and *kin* or *kind*, Eng.; *genu* and *knee*; *gleba* and *clod*; *gno-* and *know*) we should be led to search for a verb *gen*; and such a root virtually presents itself in the participles *cognitus*, *agnitus*, contracted from *co-gen-itus*, *ad-gen-itus*; whereas from the secondary verb *gno-* would have been deduced *cognotus*, *agnotus*, in agreement with *gnotus* or *notus*.

The ultimate analysis of a word will at times lead us into the obsolete parts of language, where the lost forms of one branch must be supplied by analogy from the corresponding roots of allied branches, or by what is after all a safe, though to many it may seem a bold inference, from the derivative forms of the same branch. Thus the Latin verbs

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* The old language had generally a single consonant, where the Latin language preferred two.

opta-, *gusta-*, *ructa-*, *vita-*, tell us, both by their meaning and their terminations, that like *agita-*, *ducta-*, &c., they are possessed of the frequentative suffix *ta*, and that the initial syllables *op*, *gus*, *ruc* or *rug*, and *vi* are alone radical. Precisely the same suggestion would have proceeded from a consideration of the substantives *op-tion-*, (nom. *optio*) *gus-tu-*, (nom. *gustus*), *ruc-tu-*, and *vi-men*; for the suffixes *oion-*, *tu-*, *men-*, unmistakeably tell us that they can only be added to a verb. Thus, without further evidence, it would be quite reasonable to assume the existence of such monosyllabic bases, even if we did not know that the Greek *γευ-ομαι γευσ-τικος* pointed to such a root as *γευς* (or rather *γυς*, for the *ε* is no more an ultimate part of the root than in *φευγω*), that *ερευγομαι* bears witness to a root *ρυγ*; and that Varro has the simple verb *viere*, "to bend," from which *vitare*, "to keep bending, and hence avoid by constant movement of the body," naturally flows.

Having thus insisted on the doctrine that the only safe and the most valuable system of etymological inquiry is that which proceeds by gradual steps and by cautious induction, we propose in a future paper to consider the formation of some words, where our lexicographers seem to have been misled.

CLAUDIUS.

Notices of Books.

M. TULLII CICERONIS CATO MAJOR SIVE DE SENECTUTE, LAELIUS SIVE DE AMICITIA, ET EPISTOLAE SELECTAE. WITH NOTES, AND AN INDEX, BY GEORGE LONG. (London: *Whittaker & Co. George Bell.*)

JUDGING from the contents of many modern school-books, and from the extraordinary rapidity with which they are *manufactured* by some persons, it would seem to be a prevalent opinion that works intended for the use of children require less care in the making, and consequently less knowledge and ability in the makers, than other species of literature. No notion, however, can be more thoroughly erroneous, or productive of greater evils. The very circumstance, that the students of such works are incapable of detecting their mistakes, obviously renders necessary more than usual accuracy in their composition, especially as school-books furnish the foundation, so to speak, upon which the whole superstructure of knowledge must be reared; so that any error in them can hardly fail to be the source of numerous other errors, in continual and increasing succession. Moreover, the objects to be kept in view in a good school-book are to some extent peculiar, and the mental condition of those for whose use it should be adapted is widely different from that of older persons: now these are things that can be fully understood only by those who have made them distinct subjects of study, and are practically conversant with all their bearings; hence none but experienced and skilful teachers are competent to write sound and useful school-books, and even they will fail if they attempt to write rapidly; for minute attention to every part, and careful adaptation of each part to the whole, are indispensable in elementary works; and these are conditions scarcely compatible with any but a very gradual method of procedure. Such being the case, we might reasonably suspect the quality of school-books compiled on the modern system, even without a very minute examination of their contents; but there is unfortunately no lack of numerous and, commercially speaking, most successful works, which amply confirm and convert into certainties the worst suspicions founded on the mode of their production.

Entertaining such opinions, it is with the greatest satisfaction that we have read the work before us, proceeding, as it does, from the pen of one who stands so deservedly high in the estimation of scholars and intelligent teachers as Mr. Long. His services to the cause of sound education are known to all who take an interest in that subject; and his well-established reputation for extensive and profound learning gives more than usual weight to his opinions upon classical education, and guarantees the accuracy of any work to which his name is affixed. A school-book written by one every way so well qualified for the task is heartily welcome, not only for its own sake, but also as affording a prospect of a termination to the reign of those shallow compilers and plagiarists, whose flimsy, prolix, and undigested productions have done so much to bring discredit upon classical studies. Works like the present will do more to introduce a better state of things than any amount of mere argument, however conclusive; they will render the continued use of inferior books impossible, by furnishing a standard, the application of which at once proves their inferiority.

Mr. Long, being deeply impressed with the defects and absurdities of the usual method of teaching the elements of Greek and Latin, has written a long and interesting preface to this work, in which he explains and recommends the method of Ascham, as expounded in his "Schoolmaster;" points out the principal errors now prevalent in reference to classical education; and gives the results of his own experience, as a teacher, in a number of remarks that bear the unmistakable impress of sound sense and practical acquaintance with the subject. There are few teachers who would not derive valuable suggestions from this preface, which we commend to the attentive perusal of all who sincerely desire to uphold classical studies in this country. We select the following passage, as presenting some of Mr. Long's views in a short compass.

> "The clear, direct way to an improvement in our classical studies is to abandon the ordinary making of 'Latines;' to adopt Ascham's plan as soon as the boy is prepared for it, and to consider well how he should be so prepared; for that is really the only matter in dispute among good teachers. Further, to abandon all books of exercises which abound in multitudinous rules and fragmentary exercises; to choose as a book of rules to refer a boy to (for I do not reject generalizations, but only the mode of using them), which are as plain and simple as may be, with plenty of good examples, whether such book be a grammar or some well-arranged system of rules with both examples and exercises; and as to the endless niceties and curiosities of a language, to trust to careful reading and a good teacher, for they cannot be learned by rules. If I recommend Ascham's method, it is not simply in order that boys may learn to write Latin; it is in order that they may learn to read it and understand a Latin author well. But at the

same time, I shall observe, by way of meeting the objection of those who are so mightily concerned about young boys learning to write Latin, as if the thing were possible, that I expect a pupil, who has been trained in the way that I suggest, and has been saved from the exercise system, though he is not professing to learn to write Latin, to write it better than the boy who has been learning to write bad Latin: and if a pupil so trained, as it is here recommended, chooses to use his own diligence, when he has attained proper years, he shall with reasonable pains write Latin with ease, as well as it can be written now-a-days. For I maintain that the writing of Latin well, if that is the object proposed, can only be attained by a student who has already made considerable progress in the language, and has reached to years of understanding; and that the exercise system generally, so far from preparing him to write Latin, is a direct obstacle to the acquisition of this power."

The book itself is executed in a manner worthy of the editor; higher praise it would not be easy to bestow. The text, consisting of two of the most interesting of Cicero's works, and of a selection from his letters, amounting to sixty-one, including the long one to his brother Quintus, is in the main that of Orelli, and is very carefully printed and punctuated.

"The notes," says Mr. Long, "are mainly intended to explain the language. I have attempted to explain the meaning and use of a few single words, which are either difficult or sometimes misunderstood; the right placing of some words, which it is important to observe; and the usage of those words, which chiefly serve to connect the subordinate or dependent with the principal sentences. I have not attempted to give reasons for certain usages or forms of expression, for such reasons are generally very insufficient; but I have attempted to show the logical structure of the sentence." "Notes cannot in any reasonable space explain everything; and indeed they ought to be chiefly designed for advanced students and teachers; they should rather instruct by suggesting what a learner should look at, than by aiming at complete exposition." "It is the teacher's business to supply all necessary explanation for beginners; and, for this reason, notes are not required for young boys. As already suggested, what I have done in these notes, has been done with the view of aiding teachers and more advanced students, rather than for very young scholars."

This is a very modest description of the notes, which will be found to contain a great deal more than it would lead us to expect; in fact, they seem to us to be exactly what are required in a school-book; elucidating all the real difficulties, both of subject and expression, that occur in the text; containing sufficient historical explanation or reference, and suggesting true principles of grammar and philology whenever an occasion presents itself. Every page affords examples of accurate knowledge aptly applied, and proves that the editor was thinking about what the reader would be most likely to need, not about how he could display his learning. Above all, Mr. Long has been careful to make his notes subordinate to what ought to be the chief object in studying any book—the perfect comprehension of the author's *meaning;* without which it is manifest that a correct knowledge of the signification of individual words or phrases is impossible. In a word, this work is calculated not only to enable the student thoroughly to master the writings of Cicero contained in it, but also greatly to increase his knowledge of Latin generally, and to exercise his understanding in such a way as to render him better qualified to study with success any other subject.

We observe that Mr. Long speaks favourably of the crude-form system, and points out some of its advantages in an etymological point of view. He often refers also to Professor Key's Grammar, which is written on that system. Mr. Long, however, has not ventured to adopt the plan in his notes, but adheres to the usual method of employing the nominative of substantives and the infinitive or first person singular of verbs, when speaking of words considered independently of others.

It should be mentioned that this is the second in the series of "Grammar-school Classics," which, if continued and completed with the care and ability that distinguish the work before us, will undoubtedly be one of the most valuable contributions ever made to school literature.

DRAWING FROM OBJECTS, BEING AN ABSTRACT OF LESSONS ON LINEAR DRAWING GIVEN AT THE HOME AND COLONIAL TRAINING SCHOOLS; CHIEFLY DESIGNED FOR MASTERS. BY HANNAH BOLTON. 8VO. WITH NUMEROUS ILLUSTRATIONS. (London : *Groombridge & Sons.*)

MANY of our readers are familiar with Horace Mann's* account of a visit to a school in Russia, in which he describes a geographical lesson, and the lively interest excited amongst the scholars, as the teacher, with skilful hand, rapidly sketched out on the black board a rough but faithful map of their country. The dexterity there described is not, of course, easy to be attained, for it needs a quick eye, a ready hand, a tenacious memory and constant practice; but if it be attained even in a moderate degree, it is so far a gain both to master and pupil; and any help to that result should be thankfully accepted. Such a help will be found in this volume.

The authoress states that it is an abstract of lessons given during the last six years, to nearly two thousand pupils; that the system, the basis of which is drawing from *objects* instead of copies, originated in France, but the manner of applying it is her own.

In a sensible introduction the subject is discussed in its general bearings, and remarks are made upon the ignorance even of the merest rudimentary principles which exist amongst our artisans and mechanics. This is followed by a series of rules, clearly put in plain language, and fully illustrated with spirited woodcuts.

We highly approve of the plan and execution of the volume. We have no doubt of the truth of the principles, and we think that any teacher who has ordinary diligence may acquire from the study of it a very fair amount of artistic skill and a practical knowledge of the difficult science of perspective, without the mention of its name.

We are enabled to accompany our extracts from the prefatory remarks with some amusing engravings. For the rules and illustrations which bear more directly on the practice we must refer our readers to the volume itself.

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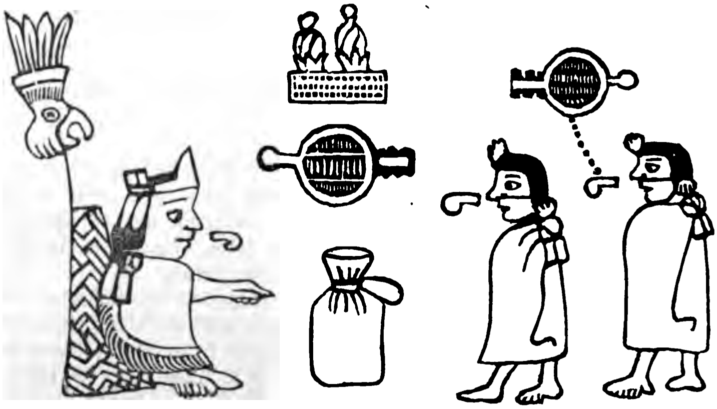
* Quoted in Mr. Dawes's Suggestive Hints, p. 178.

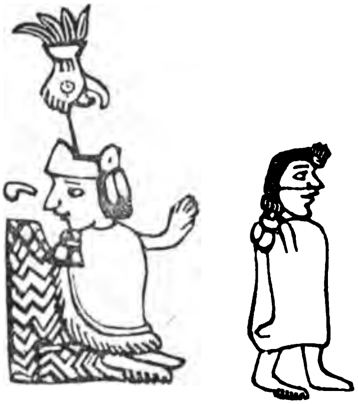
"It is important that the teacher should himself possess the power of delineating, for pictures are expensive, and numberless illustrations are in request, such as no portfolio can supply; but could the representation of every object of household furniture, every variety of tree, shrub, plant, and flower, of bird, beast, fish, and insect, be obtained when wanted, experience has shown that it would not interest the scholar so much as the comparatively rude but spontaneous illustrations chalked out by the master on the black board or slate. Such drawings would be more valued than finished pictures of the same objects, chiefly because 'Teacher made them.' Moreover, a picture can represent an object but in one point of view; if it happen that this is not apprehended, the teacher will be at a loss, and the children remain unconvinced of that which the picture was intended to prove to them. But the master should not be satisfied till the object has been shown in fifty ways, if the forty-ninth has not been comprehended. Again, the children's faculties are called into more energetic action by a rough spirited outline, than by an elaborate and perfect representation. Where the picture is complete, there is no further scope for the fancy of the spectator; but an unfinished picture pleases because it leaves room for the creations of fancy, such as are frequently called up when looking upon a discoloured wall, or into the dying embers of a fire. Neither is colour *necessary*. A few strokes may be made to convey the idea of any object with which we are familiar.

"We seldom meet with a more rude representation than in the following outlines; but he must possess very little imagination or ability who could not manufacture from it a five minutes' tale, and add a moral at the end. The drawings are part of an ancient manuscript, recording in *picture language* the circumstances connected with the arrival of the first settlers in Mexico. This interesting document concludes with the painful event here attempted to be portrayed.

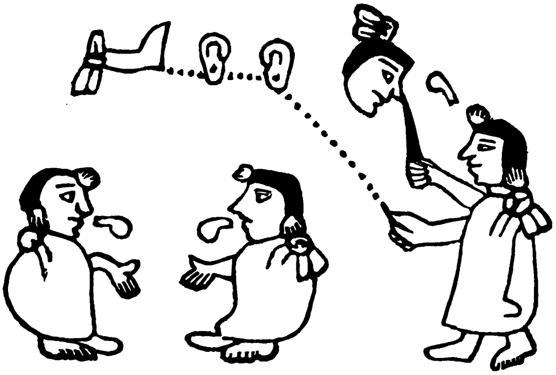


"Here are evidently two men brought before regal authority, charged with the theft of the bag to which the king is pointing, and of which he and the men are talking, as the object opposite the mouth of each is intended to intimate. (Was it a bag of Mexican gold which these Achans coveted?)

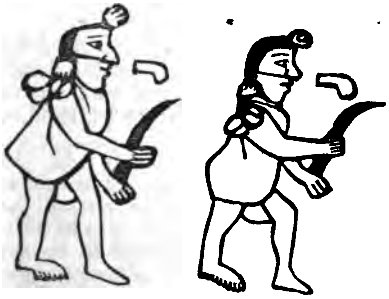
"In this second scene we see royalty, with averted head, dismissing one of the offenders, where, as is most significantly shown, his idea of morality has so far overcome his sense of politeness, as to lead him to withhold even a parting glance from the condemned, who walks away more unconcernedly than his circumstances seem to warrant.



"Next comes a parting interview;



and then we see the executioners walking away with a satisfied air, uttering more words, left to be imagined by the reader. Although explanations are wanted for the details, although the feet *do* look like brushes, and the artist has apparently concluded that eyelashes are appendages superfluous, and that ears are unnecessary, except when required by way of penalty in a court of justice, there is a character about the whole narrative which cannot fail to give the intended information, and leave sufficient scope for fancy.



"Linear drawing or pictorial writing is, therefore, all that is considered necessary for a teacher. To propose making an artist of every teacher would be absurd; nothing more is meditated than that he should have a knowledge of principles and skill of hand to assist him as occasion may require." * * * * *

"The following may serve as an example of the working out of the system. We will suppose that the lesson to be given is upon the square. The attentions of the class having been called to the various appearances it presents in vertical and horizontal planes, and its delineation in these different positions having been effected with accuracy, the students are next directed to reproduce it,—by making a row of windows square to the eye. Their centres having been found, and the squares of glass placed, the same row of windows has to be represented above the eye, and obliquely towards the left; afterwards obliquely towards the right; then obliquely to the right and left below the eye. In succeeding lessons, the same model is worked out, as a door in several positions; then as a wall; then two walls united; afterwards windows and doors are placed within the walls; also a portion of an interior is drawn; pictures of equal and unequal sizes, and at various distances from the eye, are suspended against the walls. Chairs, tables, and stools, each including right angles, may also be worked out in various positions to illustrate this model.

"Upon the same principle, the figure of a circle is formed into clocks, plates, cups and saucers, mugs, jugs, pails, pots, circular tables, stools, and other articles with which the pupils are familiar, proving to their understanding that geometrical forms are to drawing what the ten characters are to arithmetic, or the twenty-six letters of the alphabet are to a language. One great recommendation to the system is its requiring the student to think and investigate for himself. Think he must, and carefully; strive he must, and earnestly, or little progress will be made. But to the careful, thinking, and indefatigable student there is a recompense worth working for: there are sources of delight ever new and varying, and of which no ordinary circumstances can deprive him. 'Were I never to draw another line,' it has often been said to the writer, 'I should be thankful I had practised this system of drawing.' 'I have learnt to see and to think,' say others; and one who has now become an efficient teacher of the system in his own school, once said, that the pleasure he experienced was not so much to be referred to the fact that, in a short period of time he had learned to convey to his slate the images of objects, as to the intellectual character of his lessons.

"The eagerness displayed for the lessons, the regret manifested for a lost opportunity, the patience with which the same ground, time after time, is traversed, the cheerfulness and courage with which new and increasing difficulties are encountered, all tend to prove that the system is not a specious contrivance, destined only for an ephemeral existence, but that it rests upon the stable foundations of truth and utility."

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"To facilitate the making of a good line, two things must be attended to: *first*, that the line be begun at the proper end; *secondly*, that the chalk-holder be rightly held. All vertical lines should be made from top to bottom, and horizontal and oblique lines should be begun at the left hand of the slate, and produced or continued towards the right hand.

"Secondly, the porte-crayon, or chalk-holder, must be properly held. In whatever position a line is to be made, the porte-crayon should be held at right angles to that position. Therefore, if a line is to be vertical, the position of the porte-crayon should be horizontal; if the line is to be horizontal, the position of the porte-crayon will be perpendicular to it—not perpendicular to the slate, but so as for the porte-crayon to form a right angle with the line. The same for oblique lines. If this rule be not attended to, the hand will frequently cover that part of the slate upon which the line is to be, and the eye will be unable to tell whether or not the line is being produced in the right direction.

"No line should be made before its precise position be indicated by two dots, one for its commencement, the other for its termination. If the hand is moving or travelling along the slate without a fixed spot for its destination, it will move with fear, and perhaps never reach the place intended. Another advantage arising from the use of these dots is, that they will at once indicate whether or not the line which is to connect them will, when made, be in the right direction. If right, the line can be made without fear; if wrong, the dots can be soon altered in position; and time and materials have not been wasted in making an incorrect line.

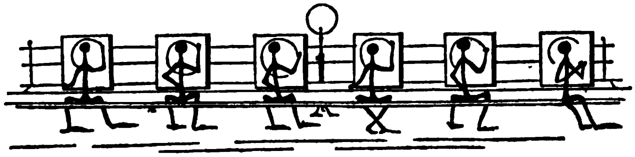
"Never allow the pupils to *paint* a line, i. e., do not let them habituate themselves to the practice of going over a line again and again, touching it up as if being painted. The more there is done by one effort of the pencil, the more expression there will be in it. If one line will answer the purpose, it is folly to put more, for in this, as in many other cases, whatever does not help hinders.

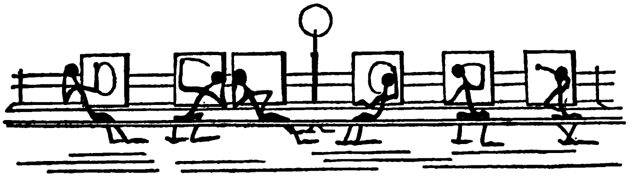
"The porte-crayon should be held by the thumb and first finger, and supported and guided by the second, which is the strongest. The two fingers touching the porte-crayon should be placed firmly upon it, and be perfectly straight. If bent, or curled round over and under the pencil, they lose half their strength and much of their elegance.

"Each pupil should sit perfectly upright and opposite to the middle of his slate, which, if circumstances will admit of such an arrangement, should be upright, or as nearly so as possible.

"In picture-galleries we often see the upper pictures so placed as to project from the wall, only the lower edge of the frames touching it. This position of the picture brings the eye of the spectator more nearly opposite to its centre, when a better view of it can be obtained than if seen obliquely. We do not expect to understand a person's countenance so well by looking at his profile, as at his front face. We say, 'Turn round and let me look at you full in the face.' Just so we should look at a picture.

"The pupils, therefore, should sit, with reference to their slates, as here represented in the first line of figures, and not as in the second.





"The arm must be free, and the hand independent of the slate, i. e., no portion of the hand or arm should rest upon the slate. A habit of drawing in this manner is at first difficult; so is everything which is worth acquiring.

"To make either straight or curved lines well by hand has always been thought a proof of skill. The name of but one Persian painter has descended to posterity, and he is praised in Asia, for drawing straight lines without a ruler."

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 66.—*Proposed by J. H.*

If 5 excavators sink a circular shaft, 8 feet in diameter and 125 fathoms deep, in 100 days of 10 hours each; how many nights of 7 hours each will 4 excavators be in sinking another shaft, 6 feet in diameter and 75 fathoms in depth; the difficulty of working by night being one-seventh greater than that of working by day, and the hardness of the latter ground being to that of the former as 7 to 5?

Answered by Mr. Barnacle, Empingham; Mr. Wilson, Sebergham; Mr. Herbert, Woolton; and Mr. Tregenzie.

Content of the first shaft $= 8^2 \times {\cdot}7854 \times 125 \times 6$

$= 37700$ c. ft. nearly.

Content of the second shaft $= 6^2 \times {\cdot}7854 \times 75 \times 6$

$= 12723$ c. ft.

No. hours 1 man would take to excavate 1 c. ft.

$$= \frac{5 \times 100 \times 10}{37700} = \frac{5}{37{\cdot}7}$$

∴ No. hours 4 men would take to excavate

$$12723 \text{ c. ft.} = \frac{5 \times 12723}{37{\cdot}7 \times 4} = 421{\cdot}8.^{*}$$

Now since the difficulty of working by night is $\frac{1}{7}$ greater, and moreover, owing to the hardness of the material, the time is further increased by the ratio $\frac{7}{5}$,

∴ No. hours 4 men would take to excavate

$$\text{the second shaft} = \tfrac{7}{5}\left(\tfrac{8}{7} \times 421{\cdot}8\right)$$

$$= \frac{8 \times 420{\cdot}8}{5} = 674{\cdot}9.$$

$$\therefore \text{No. nights} = \frac{674{\cdot}9}{7} = 96{\cdot}4.$$

Observation.—In problems of this kind the *work* in raising the material should be taken into account, but owing to a deficiency in the data of the question here proposed it could not be solved on this principle. Some of our correspondents, who employed the method of proportion, gave erroneous answers to this question.

QUES. 67.—*Proposed by Aquarius.*

How many imperial gallons of water will be discharged by a metal pipe, one mile in length, three inches diameter, and having twenty feet fall from the head of the water.

Answered by Tom Tomkins.

Here the theoretical velocity of discharge is expressed by

$$v = \sqrt{2gh} = \sqrt{64\tfrac{1}{3} \times 20} = 35{\cdot}87;$$

$$\text{and the discharge per min.} = \frac{35{\cdot}87 \times 3^2 \times {\cdot}7854 \times 60}{144}$$

$= 105{\cdot}64$ c. ft. $= 658{\cdot}39$ gallons.

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* If the first two expressions had been retained in formulæ considerable labour would have been saved in the calculation.

But practically this result is very far from the truth, inasmuch as no allowance is made for friction and the vena contracta.

Poncelet gives the following formula for the velocity of discharge, viz.

$$v = 48\sqrt{\frac{h\,d}{l + 54\,d}}\ \text{feet per sec.,}$$

where $l = 5280$, the length of the pipe;
$h = 20$, the height of the cistern;
$d = \frac{3}{12} = \frac{1}{4}$, the diameter of the pipe.

$$\therefore\ v = 48\sqrt{\frac{20 \times \frac{1}{4}}{5280 \times 54 \times \frac{1}{4}}} = 1{\cdot}475$$

$\therefore$ The discharge per min. $= {\cdot}7854 \times \frac{1}{16} \times 1{\cdot}475 \times 60$
$= 4{\cdot}33$ c. ft. nearly;

whence the number of gallons is readily found.

Weisbach gives the following formula:

$$v = \frac{\sqrt{2gh}}{\sqrt{1 + e + e_1 . \frac{l}{d}}}$$

where e = the coefficient of resistance for the portion of the tube next the cistern; e_1 = the coefficient of friction of the water in the pipe, which slightly varies with the velocity; and so on to the preceding notation.

This formula gives a result slightly in excess of that obtained from Poncelet's,

Mr. Crampton gave a solution of this question, nearly coinciding in result with the foregoing answer, from a formula given in the Encyclopedia Britannica.

QUES. 68.—*Proposed by Mr. O'Clazey, Durham.*

A steam-boat sails from Liverpool at ten in the morning in a direct line for Douglas, at the rate of 15 English miles per hour. Another sails from the same port at noon, in a direct line to Dublin, at the rate of 20 miles per hour. What is the distance between them at 2 P. M., supposing the distance from Liverpool to Douglas to be 82 miles, that from Liverpool to Dublin 142 miles, and that from Dublin to Douglas 98 miles?

Answered by Mr. Stollard, and similarly by Mr. Royds, Mr. Crampton, Nero, and Mr. Sothern.

Let the points A, B, and C represent the respective situations of Liverpool, Dublin, and Douglas; and let A_1 and C_1 be the respective positions of the two vessels at 2 o'clock. Then in the triangle A B C we have (Hall's *Trigo.* p. 56, or Tate's *Geo. and Mensuration*, p. 125)

$$\cos.\ \frac{B}{2} = \sqrt{\frac{161 \times 63}{142 \times 82}} = \cdot 933323,$$

$$\therefore\ \frac{B}{2} = 21^\circ\ 3', \text{ and } B = 42^\circ\ 6'.$$

Then in the triangle $A_1\ B\ C_1$ we have (by Tate's *Geo. and Mens.* p. 128)

$$\log.\tan.\ \frac{B-C}{2} = \log.(60-40) - \log.(60+40) + \log.\cot.\ 21^\circ\ 3',$$

$$\therefore\ \frac{B-C}{2} = 27^\circ\ 29', \text{ and } \frac{B+C}{2} = 68^\circ\ 58',$$

$$\therefore\ B = 96^\circ\ 27'.$$

In the triangle $A_1\ B\ C_1$ to find $A_1\ C_1$.

$$A_1\ C_1 = \frac{\text{Sin. } 42^\circ\ 6 \times 60}{\text{Sin. } 96^\circ\ 27'} = 40{\cdot}4 \text{ miles.}$$

Or thus, by the Proposer.

$$\cos.\ B = \frac{82^2 + 142^2 - 98^2}{2 \times 82 \times 142} = \frac{4321}{5822} = \cdot 742184.$$

Also, $A_1 C_1^2 = 60^2 + 40^2 - 2 \times 40 \times 60 \times \cdot 742184 = 3600 + 1600 - 3562{\cdot}4832$ $= 1637{\cdot}5168.$

$\therefore$ $A_1\ C_1 = 40{\cdot}46$ miles, the distance between the steamboats at 2 P. M.

Prismoid gave a neat geometrical solution of this problem.

LIST OF MATHEMATICAL ANSWERS.

Nero, Berwick, ans. 66, 68; J. Stollard, ans. 66, 68; J. Royds, ans. 66, 68; F. R. Crampton, St. John's Wood, ans. 66, 67, 68; J. Tregenza, ans. 66; W. Rightou, Riply, ans. 66, 68; B. Whitham, Wolverhampton, ans. 66, 68; J. Allen, Fordmoss, ans. 66, 68; J. H. C. Belhelvie, ans. 66, 68; J. Salter, Durham, ans. 66, 68; J. Herbert, Woolton, ans. 66, 68; J. O'Clazey, Durham, ans. 66, 68; G. Barnacle, Empingham, ans. 66, 68; Mercator, Brigg, Lincolnshire, ans. 68; Elizabeth Jane Mickman, ans. 66; J. Norman, Wellington, ans. 66, 68; J. H. Barber, Harworth School, ans. 66, 68; W. Wakely, Marlborough, ans. 66, 68; Hibernia-on-Tees, ans. 66, 68; Emma Royds, Hollingworth Free School, ans. 66, 68; G. B. Bush, Yeovil, ans. 66, 68; A. J. Waldron, Bishop's Auckland, ans. 68; Prismoid, Tewkesbury, ans. 66, 68; Quaero, Ashford, Kent, ans. 66; W. Crow, Huddersfield, ans. 66; T. Sothern, Burtonwood, ans. 66, 68; Benefield, Northamptonshire, ans. 66, 68; T. Wilson, Sebergham, ans. 66, 68.

NEW QUESTIONS,

TO BE ANSWERED IN OUR NUMBER FOR AUGUST, 1850.

QUES. 69.—*Proposed by Mr. Salter, Durham.*

A gentleman ordered his cooper to make a vat which should contain 100 gallons of corn; required the circumference of the bottom, the length of the staves being 4 feet.

QUES. 70.—*Proposed by Mr. Allan, Fordmoss.*

Let A B C D be a square; from A draw a line to the middle of B C; from B to the middle of D C; from C to the middle of A D; and from D to the middle of A B: required the area of the figure formed by the intersections of these lines.

QUES. 71.—*Proposed by Mr. O'Clazey, Durham.*

A ball, descending by the force of gravity from the top of a tower, was observed to fall $\frac{1}{3}$ of the height in the last second of time. Find the height of the tower and the time of descent.

Intelligence.

THE NATIONAL SOCIETY'S ANNUAL MEETING was held on Wednesday, May 29, at the Society's Central Schoolroom, Broad Sanctuary, Westminster. The Lord Archbishop of Canterbury took the chair, as president of the Society, soon after one o'clock. There were also present the Archbishop of York, the Bishops of Oxford, Exeter, Salisbury, Bangor, St. Asaph.

Among the clergy were the Archdeacons Thorp (Bristol); Harrison, and Sinclair; the Reverends G. A. Denison, H. H. Norris, H. Mackenzie, Dr. Biber, R. Burgess, Daniel Wilson, R. Harvey, R. H. Howard, John Jackson, R. Montgomery, A. Watson, E. Hawkins, and Henry Hughes.

Among the laity were Lords Harrowby, Redesdale, John Manners, M.P., A. J. B. Hope, Esq., M.P., W. Page Wood, Esq., M.P., F. H. Dickenson, Esq.

After prayers by the Primate, the balloting for four members of the Committee took place. The Rev. W. Short, and Messrs. W. Cotton, R. Twining, and W. Davis were re-elected, with the exception of the first named, who were displaced by the election of the Rev. Lord John Thynne.

The Secretary having read the report, the following resolution was moved by the Rev. G. A. Denison, and seconded by Lord John Manners:—

"Whereas the Correspondence relating to the Management Clauses has been finally closed by the letter of the Rev. the Secretary of the National Society to the Secretary of the Committee of Council on Education, bearing date Dec. 11, 1849.

"And whereas the Committee of the National Society have declined, in the said letter, to recommend the Management Clauses, A, B, C, D, of the Committee of Council on Education to Founders of Schools.

"And whereas no one of the said Management Clauses A, B, C, D, provides for the case of such Founders of Schools as desire to place their Schools under the sole and permanent control of the Clergyman of the Parish (or Ecclesiastical District), and the Bishop of the Diocese.

"And whereas the said Management Clauses are, in divers other respects, as appears upon the face of the Correspondence, open—even as finally revised—to very grave objections.

"And whereas it is highly expedient that sufficient Management Clauses, and such as are constructed upon sound Church principles, should be provided for the use of such Founders of Schools as may desire to adopt them.

"And whereas the Committee of the National Society have consented to publish, in their monthly Paper, a series of Management Clauses, prepared by the Committee of June the Seventh, for the information of such founders of schools as shall be admissible to receive grants from the Society.

" Resolved—That this Meeting is much gratified by the facility thus given to the circulation and adoption of properly framed Clauses, which Clauses it feels convinced will prove highly useful to the Founders of Church Schools."

Two amendments were proposed, the Earl of Harrowby, the Rev. W. Hughes, Rev. R. Burgess, Rev. Mr. Mayow, Mr. W. P. Wood, M.P., Mr. A.J. B. Hope, Rev. Mr. Clutterbuck, Rev. Mr. Yates, Rev. H. Mackenzie, and Lord Redesdale taking part in the discussion. The original resolution was carried by an immense majority.

The following resolution was moved by Mr. Henry Hoare, seconded by the Rev. Dr. Biber, and carried:—

" Resolved—That, in the opinion of this meeting, the National Society cannot be indifferent to any interference with the field of duty which the royal charter of incorporation has assigned to this society, by the establishment of any system of education for the children of the poor, inimical to their education in the principles of the Established Church."

As was also the following:—

" Resolved—That, in the opinion of this meeting, it is highly desirable that the Committee of the National Society should take steps forthwith for organizing an efficient system of diocesan inspection throughout England and Wales."

A vote of thanks to his Grace the President was passed, and his Grace pronounced the benediction.

The Rev. T. Jackson, Principal of the Training College, Battersea, and Canon of St. Paul's, has been appointed Bishop of Canterbury, New Zealand.

To Correspondents.

Page 187, *line* 14 *from top*, for Guardafui is the most western, *read* most eastern.
———— *line* 17, for in the west, *read* in the east.

J. W. S.—We cannot answer this question positively—so far as our knowledge goes your information is incorrect.

T. L.—We hope to comply with your request respecting the Model of a School Report next month.

Constant Reader.—The Minutes of Council will, we believe, be published in a few days.

Questions and answers of the plainest kind on the New Testament History, by A. S. M., price 4d., will, we think, answer your purpose.

We hope shortly to give in our pages the Geography of our Colonial Possessions.

H. W. W.—If your information be correct, as we suppose it is, we have no doubt there is good reason for the alterations; probably it has been found necessary to fix a limit, that the number of teachers may not increase too rapidly.

We are unwillingly obliged to postpone the insertion of our Correspondent's letter on " Boarding Schools for Poor Girls" till next month.

The conclusion of the article on Indices, and the continuation of the Geography of Africa, will also appear in our next number.

EDUCATION OF THE POOR IN RURAL DISTRICTS.

There are few theories which require, what in the language of astronomy would be called, "corrections," more than that of the education of the poor. What can be more simple than the theory itself? Take a given parish; calculate, according to approved rules, the number of children to be educated; build a school-room, with six square feet of space for each child; raise a sufficient annual subscription to obtain the services of a proper master or mistress; and the thing ought to be complete. The poor ought, in common reason, to be anxious to send their children, the children ought to be willing to learn, and, in the course of a few years, the whole state of things in the parish should be changed. Such was, and is still in a great degree, the common belief; and so long as the want of the mere machinery of education—the roomy school, the discipline, and some teacher beside the Village dame—was the great want in ninety-nine out of a hundred country parishes, such belief was not unreasonable.

But every year of experience proves that some correction is necessary to so simple and easy a result; and it is rather amusing to consider the constant change which has taken place in public opinion in this respect. Some time ago Sunday schools, in which a number of children were gathered together to spend two hours of the week in learning, and bribed to regularity of attendance and decent behaviour by all kinds and sorts of rewards, were the great specific for the ignorance of the masses. Then came the belief, that daily schools of any size might be kept by *one* teacher, through the help of the boasted "mutual instruction," the master or mistress teaching the children of the first class only; and the instruction thus given, on any subject, passing through them to the other classes: it seems almost incredible that such a system could ever have obtained so great an amount of countenance and support from people of wisdom and experience. This, however, has at length been exploded, and we have now come to the conclusion, that trained teachers are the one thing wanted, and that, when, as may be expected in the course of a few years, our training-schools and colleges have sent out a sufficient number of qualified teachers, we shall at last get nearer to the goal, and be able to spread the blessings of education through the length and breadth of the land.

It is far from our wish or intention to throw any discouragement on the efforts either of those who exert themselves to give, or of those whose energies are employed in receiving such a training for such an end; may they go on and prosper. But still it seems well for all to remember that there are other hinderances in the way of education being generally spread among the poor, which seem to require other and different remedies from those which it is now the fashion to consider all-sufficient; and it is most desirable, in all such works as this, that too great expectations, invariably causing as they do reaction and coldness, should not be raised.

Now, one great hinderance—as we believe all who, like ourselves, have had experience in country village schools (and possibly the managers of town schools also), will at once allow, arises from the irregularity, and in many cases from the want altogether, of attendance on the part of the children. It is the case even with girls; no sooner do the periodical seasons of hay-making, potatoe-planting, wheat and bean dibbling, or anything which requires the help of the young, come round, than the school is at once half-emptied, and the knowledge and habits which six weeks have been spent in gaining, are pretty well lost in three; the classes are put out of even working order; and the regular and attentive are kept back to wait for their irregular companions; few people, we believe, but those who have the constant management of country schools, know what a continual hinderance this is to anything like rapid improvement in their condition. Then, too, there is always a large class of poor people in a parish, the careless and improvident, who are not only ready to take away their children at the least possible call for their services, but who also, from the inability to send them as neat perhaps as their companions, or from their being useful to them at home, keep them away altogether; or, at most, send them at intervals so rare and distant, that for all purposes of improvement they might as well be away. And, as to the remedy for all this: whereas People often think and say that it lies in the having a really good school, and that it is only the indifferent quality of the education which makes the poor indifferent to it; it seems to be forgotten that the very efficiency of the school, although it will make it far more attractive to the better kind of people, renders it still less palatable to these. Take, for instance, the famous King's Somborne School, and does any one suppose that such people as every clergyman can call to mind in his own parish, will for any length of time, at considerable self-denial, spare a higher weekly payment than is usual, and money to buy books, with combs, hair, and tooth-brushes, &c., out of weekly earnings of 6*s*. to 7*s*. a week? Such a school will, indeed, always flourish, as it deserves to do, and will flourish all the more because it will draw away the best of the children from neighbouring parishes; but it will, we believe, afford no kind of remedy to the evil we have been noticing; especially when the novelty is over, and the people have found out that no immediate temporal advantages follow from their children having learned what to them seems so wonderful. And, indeed, so long as the labouring classes in country parishes continue in their present condition as to wages, earning only just what will furnish them with the barest necessaries of life, it seems vain to hope that the greater number of them will forego the immediate relief which the employment of their children affords, for the remote, and, to them, unintelligible advantages of a good education. Some, no doubt, will deny themselves for the benefit of their children; but from the mass we must not look for such heroism. We must expect that they will spare their children for the school when the effort costs them but little, but no longer. Offer them but 2*s*. a week on the one side, and set before them on the other the advantages of the school; and it will be strange, indeed, if all the sciences, be they ever so many, do not at once kick the beam.

All this is true, as we fancy no country clergyman nor schoolmaster will deny, of *girls* as well as boys; but, as respects the latter, a further class of difficulties comes in: in the first place, supposing we could get the boys to learn, it would clearly be impossible in the greater part of country parishes to provide the means of teaching them. An annual income of 80*l.* or 100*l.* is no easy thing to raise from the ordinary subscribers to the village school—the squire, the clergyman, and two or three farmers: those who have tried know that even 30*l.* is not to be had without considerable effort and self-sacrifice, and this, too common on the part of those least able to bear it; and we hold it to be an unreasonable thing to expect that such self-supporting schools as that of Mr. Dawes can ever become universal or even common; they require the combination of far too many elements of success—a large parish, a clergyman of great teaching powers, and very efficient teachers under him; and, moreover, they have yet to bear the test of a longer experience; for those who know the poor, know that there are no classes who more, or so much, bear witness to the truth of the old grammar quotation: "Est natura hominum novitatis avida."

But, secondly, supposing we could in every village provide a boys' school, and an efficient master, where shall we find the boys to be taught? A few perhaps of the children of small tradesmen, or of the very best of the labourers who hope to make them somewhat higher than themselves, go to the school of the neighbouring town or large village; the rest, from the age of ten or eleven, are in constant employment, earning their 1*s.* 6*d.*, 2*s.*, or 2*s.* 6*d.* a week. Now, does it seem altogether unworthy of consideration, whether a boy who continues at school till the age of fourteen or fifteen will ever be so efficient a labourer as those who have been at work from their childhood? whether that wonderful power of endurance which distinguishes the English labourer, and which enables him to continue for ten hours, what would knock up a gentleman, however athletic, in two; and of that practical knowledge of his work, whatever it be, either among cattle or in the field; whether all this is not in a great measure gained by early practice, by the frame being hardened, and the eye and hand trained, from his very childhood? If it be so, if the better-taught boy prove the worse labourer, then we may be sure that instead of being more in request from his education, he will—unless he can find some other sphere of employment than his own native fields—be less valued and worse paid, and boys' schools will, among our agricultural people, be at a still greater discount.

But, however this be, there can be but little doubt in the minds of practical people, that so long as things continue in their present state—so long as, to use the popular phrase, the labour-market in the bulk of country parishes continues so fearfully overstocked, and wages, therefore, remain at their present price—and, so long as the wants of the body continue to have greater hold of the mass of men than those of the mind—so long it must, to a great degree, be as it is now, that a large number of the daughters, and almost all the sons, of our agricultural labourers will profit comparatively little by what is at present being done for education; that let your teachers know the names of all the sciences, or however much of the sciences themselves, you may think proper; or let them be able to answer all the questions of a government inspector, still they will make little or no impression on the mass of ignorance which overwhelms our labouring population in the country. This is not what we want, however excellent it may be in itself.

But is there no remedy? Must the mass of our labourers still continue machines for working, of astonishing endurance? and nothing else. Far be it from us to give up so great a work in despair, even if we may not and do not expect to bring it to perfection; though, at the same time, we must be allowed to protest against the notion now commonly prevalent, that it is the want of intellectual knowledge which, making the services of the church unintelligible, drives the poor into the ranks of dissent. Such a notion, when one calls to mind the state of things from the early times of the gospel, seems simply absurd. No; we believe that it is the smattering of scientific knowledge which will do that far more effectually, tending, as it does so grievously, to weaken, in those who have it, that most distinguishing of church-principles, "humility:" the church will still find, we are confident, faithful and true-hearted children, among the unlearned and unlettered, whose ignorance has been the effect of circumstances not of choice, as well as among the learned and the wise, who have not the name, but the reality of knowledge.

Still it is our duty and our privilege to counteract so far as we can this force of circumstances, and furnish our poor labouring brethren with what we can of the means of intellectual improvement. To this end, it has always appeared to us most desirable, that while each village should have its school for girls and young boys, under a good mistress, the neighbouring small town, or the chief village of the district, should have a good boys' school, in whose management the clergy of the neighbouring villages should have a voice, and to which their boys should have a right of being admitted. This would afford ample means of education for all the boys who would be able and willing to receive it; for the rest, the refuge, as we believe, is an Evening school, having the Sunday school for its help. We are far indeed from thinking with the author of a pamphlet on the subject,—a curate in the Norwich diocese—that in evening schools lies a cure for all the moral evils which beset the country labourer: this zealous clergyman, having tried the experiment for four months, appears quite astonished at the progress of his pupils, and calls earnestly upon his diocesan to hold him and his labours up to the admiration of his brethren: we have tried the experiment ourselves, and have seen it tried by others too long, to sing the song of triumph so soon and so loudly. It is a toilsome ascent up the hill of letters for the rustic youth, who has long forgotten what he learned at the Sunday school, or who perhaps never learned anything at all; and though in the first flush of eagerness and novelty he makes a zealous start, too often, long before he has reached the top, he has no strength nor inclination left. We must confess too that we have no great faith in teaching adults, as a general rule, more especially when those adults are of the country village species, with an eye and an ear for the sights and sounds of nature, and little else. The true work of evening schools is, in our belief, to carry on the work of education which was begun in the daily school, but was brought to an untimely end by the boy being wanted for labour. In this respect, joined as we have said with a good Sunday school, they are invaluable, and, as it seems to us, afford the only hope of increasing the knowledge of our labouring poor. We will, therefore, conclude this paper with a few remarks on the management of such schools, which an experience of seven years suggests.

1st.—Let it be remembered, that, if what has been said is founded on sound sense, the manager of an evening school will not so much covet the attendance of men as of boys,—it is with the latter that his true business lies; and it is, we think, open to doubt, whether the married man is not as well with his family, as at the school; if he can read, let him have a book at home; if not, we believe, as we have said, that he will very rarely learn to read well enough for it to be of any real use to him; there are of course exceptions to this rule, but of its general truth we have little doubt.

2nd.—It is essential, we believe, to the success of an evening school, that the Clergyman himself should be the chief teacher; or, if that cannot be, some person of superior station and intelligence: for as there cannot be the discipline of the daily school, from its being held by candle-light, and its being almost impossible to work entirely by classes, nothing but the presence of some such person will commonly preserve order and regularity.

3rd.—We need not say that a warm and light room is indispensable; we must trust as little as possible to that abstract thirst for knowledge, which, though some may have it, does not by any means *universally* exist; and it would be well to connect a lending library with the evening school, as a good opportunity is thus afforded for changing the books, at the only time when the labourer has leisure.

4th.—It will be a question in what way religious instruction should be communicated in the evening school, whether directly or indirectly; we incline ourselves to the latter way, and believe that the making a tract or book, of an interesting but instructive kind, the class-book, will do more good than set religious teaching; of which too there will be the less need, if it be a rule, that all boys, not confirmed, who attend the evening school, should also come to the Sunday school: with others, perhaps other means might be taken. And so again there will probably be a difference of opinion as to the boys paying or not, the advocates of either side have much to say; but looking on the evening school as the only means of instruction open to the poorer children, especially to those whose parents have the least inclination to afford them the blessings of education, we should ourselves incline to the non-paying system.

5th.—As to the time of keeping school; it should not, be held too often, nor for too long; twice or three times a week, and two hours each time, is as much as country youths, who have been working hard for ten hours in each day, will probably relish; and, in the summer-half of the year, it is useless to think of keeping school at all.

6th.—As to the kind of instruction; of course, with boys in such circumstances, *reading* will form the great staple, with explanation of the matters read; but it will commonly be found that *writing* is a very popular part of the school work, and a little arithmetic will both please the boys, and do something at least towards producing accuracy of thought and reasoning; further than this we have ourselves never been able to get. One good result has been that, though farmers are generally no warm friends of education being given to the poor, such as they themselves have never had, they have always shown themselves friendly to the simple teaching of our evening school, and often taken some little pains to give such of their boys as wished it, an opportunity of getting there.

In giving thus what is the result of experience, it has been far from our intention to think or say that evening schools may not be quite as efficiently conducted in different ways; no doubt they may. We are only most earnestly anxious to advocate their establishment in some way, from the firm and strong belief, that when quietly and simply conducted, without ostentation or puffing, they are and must ever be, of the greatest use, so long as the state of society continues as it is. We believe every clergyman, who has strength and time at his disposal, will find in the management of an evening school a real opportunity of doing His Master's work; and that the influence which he thus insensibly gains with the young members of his flock, at this most critical period of their lives, will be to their and his great benefit; and with this belief and persuasion we trust that many will try them.

GEOGRAPHY OF PALESTINE.

No. VII.

(*Continued from page* 163.)

JUDEA contained the tribes of Benjamin, Dan, Simeon, and Judah; and the chief towns of the last three of these remain to be described.

The Philistines inhabited a considerable portion of the land assigned to Dan and Simeon, and were not wholly subdued until after the return from captivity. We shall, however, appropriate, in our description, the Philistian towns to the tribes on whose soil the Philistines were so long permitted to be hostile occupants.

In the tribe of Dan were the towns Ajalon, Joppa, Arimathea, Ekron, Ashdod, and Gath.

The town of Ajalon was on the side of a hill, which formed the southern boundary of a valley of the same name. This valley extended from Gibeon westward to the coast plain; and at some point in it, near to Upper Bethhoron, and intermediate to Gibeon and Ajalon, stood the Hebrew leader, when he uttered in the hearing of Israel the remarkable exclamation, "Sun, stand thou still upon Gibeon, and thou Moon, in the valley of Ajalon!" The effect of this invocation of the Divine interference was a miraculous prolongation of the day of Joshua's triumph over the five kings.

As to the difficulty of understanding how such a miracle could be effected, without displacing the waters of the ocean and precipitating the loose part of the earth's surface into surrounding space, we ought surely to feel persuaded that Almighty power could both retard the earth in its diurnal revolution and prevent the disastrous consequences that would naturally ensue. And if we seek a worthier reason for such miraculous interposition than the mere prolongation of light for the speedier achievement of victory, we may compare the marvel with those plagues that made a mockery of the gods of Egypt, and perhaps regard it as intended to demonstrate that "the stars in their courses," fighting against their idolatrous worshippers, were but creatures of the living though unseen Father of lights, in whom Israel trusted. (Judg. v. 20.)

Joppa, an ancient seaport near the northern border of Dan, was called in Hebrew Japho, and is represented by the modern town of Yaffa or Jaffa. It is about forty miles N.W. of Jerusalem, to which it was the nearest port, although by no means a good one. Joppa, indeed, was the only port which the Israelites possessed, until Herod constructed the haven at Cæsarea; and, accordingly, it was at Joppa that the cedar wood was landed with which the King of Tyre supplied Solomon for the building of the Temple; and here, too, did Jonah embark in the vessel bound for Tarshish, when he sought to flee from that Divine presence which he imagined to be confined to the land of Israel. This town is referred to in the New Testament in connection with the history of St. Peter, who, when he lodged here in the house of Simon the tanner, saw the vision of animals clean and unclean, and was therewith instructed in the great truth, that God now "put no difference" between Gentiles and Jews, "purifying the hearts" of the former by that faith which made them spiritually the children of Abraham. (Acts xv. 9.) Here, too, the same apostle raised from the dead the disciple named Tabitha, or Dorcas, the woman of whom Scripture makes the honourable mention, "that she was full of good works and almsdeeds which she did."

Joppa has frequently experienced the calamities of war, and now presents a very mean and melancholy aspect, although possessing some resources of industry, especially in the manufacture of soap, and the rearing of fruit for exportation.

A few miles south-east of Joppa was Arimathea, if conjecture is right in supposing it to be represented by the modern town of Ramleh, which is situated in the plain of Sharon, and is surrounded by gardens and olive groves. It was the birthplace of a wealthy individual named Joseph, who sought and obtained permission to bury "in his own new tomb, which he had hewn out in the rock," the sinless body of that wondrous Being, concerning whose death prophecy had said, "He made his grave with the wicked and with the rich."

Ramleh carries on some trade in cotton and soap, and is a place of some prosperity, owing to its position on the great caravan road from Egypt to Damascus, and on the frequented way from Joppa to Jerusalem. It is very near Lydda, or Diospolis, a town of the Benjamites, where St. Peter miraculously restored Æneas, and from which the apostle was solicited to come to Joppa, on the occasion of the death of Tabitha. (Acts ix. 38.)

Ekron, or Accaron, now a small Moslem village called Akri, a few miles south of Ramleh, was the seat of the chief lordship of the Philistines, whose principal cities were Ekron, Ashdod, Gath, Askelon, and Gaza.

The Philistines, having carried off the ark of God, and in vain endeavoured to avoid Divine judgments by removing it from Ashdod to Gath, and from Gath to Ekron, resolved that from Ekron the sacred vessel should return to Israel. And as the two milch kine, drawing the cart on which the ark was placed, took the straight road to Beth-shemesh, lowing as they went in lamentation for the calves which they were leaving behind, the surprising phenomenon was to the Philistines a miraculous and awful assurance, that it was the hand of the God of Israel which had inflicted vengeance upon their cities.

Ashdod, to which the ark, when captured by the Philistines, was first conveyed, is the city referred to in the New Testament by the name Azotus, and is nearly midway between Gaza and Joppa. It was the seat of the worship of Dagon, whose image fell prostrate when the ark was profanely deposited in his temple. It appears to have been assigned to the tribe of Judah, but lay near the Mediterranean coast, within the territory of Dan; neither of these tribes, however, were ever strictly in possession of it. Philip, the evangelist, was found at Azotus, after being withdrawn by the Spirit of the Lord from further intercourse with the Ethiopian eunuch, whom he had baptized on the way between Jerusalem and Gaza.

Gath, the precise site of which is not ascertained, is generally placed within the limits of the tribe of Dan. It was one of the Philistian cities upon which the detention of the ark brought calamity, but is chiefly distinguished in Scripture as either the birthplace or the residence of Goliath, the gigantic champion of the Philistines. The fame which Israel had acquired, through the discomfiture of the Philistines, made David particularly sensitive on the reverse which was afterwards sustained; and it was a fear lest the Gittites, and the other Philistian states, should exult in the deaths of Saul and Jonathan, as reprisals for the death of Goliath, which made David exclaim, "Tell it not in Gath, publish it not in the streets of Askelon, lest the daughters of the Philistines rejoice, lest the daughters of the uncircumcised triumph."

The inability of the Danites to expel the Philistines left to the former a territory inadequate to their accommodation; and, accordingly, a multitude of them went northward in quest of another settlement; who having ascertained, by means of spies, that the people of the town and district of Laish dwelt in careless ease, attacked and overcame them, and having burnt their city, proceeded to build there a new one which they called Dan. This town, which was in the extreme north of Palestine, near the sources of the Jordan, was by Jeroboam made the northern seat of the worship of the golden calf. It has been frequently confounded with Paneas, a town four miles distant, which, when enlarged and beautified by Philip the Tetrarch, was by him called Cæsarea Philippi, in honour of the emperor Tiberius, and in distinction from the Cæsarea of the Mediterranean coast.

The insidious attack made by the Danites on the unsuspecting inhabitants of Laish, was, perhaps, alluded to in the comparison which Moses made of Dan to a "lion's whelp leaping from Bashan," and in these predictive words of Jacob, "Dan shall be a serpent by the way, an adder in the path, that biteth the horse heels, so that his rider shall fall backward." And it was probably for the encouragement of Dan, as having but one son, that the same patriarch said, " Dan shall judge his people as one of the tribes of Israel." Certainly no other of the Hebrew tribes, save Judah, was more numerous at the period of the Exodus.

Passing southward from the inheritance of Dan we enter that of Simeon, whose destiny and that of Levi were together foretold by their progenitor in the declaration, "I will divde them in Jacob, and scatter them in Israel." This prediction intimated that the Levites should have no territorial possession, but sojourn in dispersion among the other tribes; and that the Simeonites should have an indistinctly defined allotment, and not well adapted for settled habitations, being in the extreme south of Palestine, and gradually assuming, in the direction towards Egypt, the inhospitable aspect of the wilderness. The tribe of Simeon were thus doomed to lead a nomadic life, wandering with their flocks throughout a wild expanse of neutral ground, and mingling not only with the Amalekites, but also with the southern population of Judah, part of whose western and southern boundaries could not be indicated with any precision.

The principal towns in the district of Simeon were Ascalon, Gaza, Ziklag, Beersheba, and Gerar, which however were chiefly in the possession of the Philistines.

Ascalon, or Askelon, is of no particular scriptural importance. Of the five principal Philistian towns this was the only maritime one; but it derived little advantage from its harbour, which was difficult of access. It was a fortified town, and a scene of frequent warfare, especially during the crusades. A portion of the walls and some prostrate pillars are almost all that now remains of it.

Gaza was in the south-west of the Philistian territory, near the sea-coast, and was a city of the Canaanites before the time of Abraham. Its position made the phrase " as far as Gaza," to denote, in several instances, the farthest limits of conquest or dominion.

Gaza is connected with a memorable exploit of Samson, who bore off the ponderous gates of the city to the top of a hill in the vicinity of Hebron. The same place was afterwards the scene of Samson's imprisonment and death, for it was at Gaza that the Philistines, having first put out his eyes, made him grind in the prison-house; and when at a great festival in honour of their god Dagon, who was regarded as having delivered Samson into their hands, they brought their humbled enemy into the idol's temple, to exult over and to ridicule him, he pulled aside the pillars on which the temple was supported, and brought down the whole structure upon himself and the assembled Philistines, thus destroying at his death " more than they which he slew in his life." (Judg. xvi. 31.)

Ziklag was a dependency of Gath, and a few miles south of it. When David, despairing of safety under the relentless persecution to which Saul subjected him, quitted the dominions of Israel, and sought the protection of Achish, King of Gath, that Philistian prince endeavoured to strengthen his alliance with David, by assigning to him a residence in Ziklag. Here David remained for a year and four months, regarded by Achish as a friend to the Philistines, and an enemy to Israel; but the lords of the Philistines being suspicious of him, he was not permitted to accompany Achish to that assault upon the Israelites, in which the life-blood of Saul and his sons stained the verdure of Gilboa. It was from Ziklag, therefore, that David was called to Hebron, where he was proclaimed king over the house of Judah.

Beersheba, in the extreme south of Palestine, is a name with which we are familiarized by the proverbial saying, "from Dan to Beersheba." It signifies the "well of the oath," in reference to the covenant made between Abraham and Abimelech, and at the spot so named the patriarchal ancestors of the Israelites were wont to sojourn. Thither Elijah retreated, in fear of Jezebel's denunciations, and from thence he went forth on his pilgrimage of forty days unto Horeb, the mount of God. The site of Beersheba has been identified in modern times by the discovery of some ancient wells, and adjacent ruins of habitations, at a spot called by the Arabs Bir-es-Seba.

Gerar was a Philistian town not far from Beersheba, but its site has not yet been determined. Abimelech, with whom Abraham and Isaac made covenants, was king of this place.

Such, then, were the chief towns in that territory, which was divided between Dan and Simeon, but of which the principal portion was occupied by a people who, like the Phœnicians, were "thorns in the sides" of Israel, repelling the peculiar people from the shores of the Great Sea, lest the singularity of their customs, and of the great purposes which they were designed to bring about, might be disturbed by the access of trading foreigners, or by the temptations which a maritime situation might have presented, to divert the Hebrews from their providential calling. How different now is the territorial situation of Abraham's descendants, no longer hemmed in by mountain, or desert, or hostile population, but wandering in all lands, and exposed to every variety of influence; and yet how remarkable is the persistency of that distinctness which was at first impressed upon the race, inasmuch as they are still a peculiar people, resisting the usual process by which time's course obliterates the outward dissimilarities that once existed in a community. Is the distinctness which we see maintained amidst the Jewish dispersion a token that hereafter the tribes of Israel are to fulfil some special part in the consummation even of that universal kingdom, "where there is neither Jew nor Greek, Barbarian nor Scythian, bond nor free?" (Col. iii. 11.)

J. H.

GENERAL EXAMINATION OF CANDIDATES FOR CERTIFICATES OF MERIT.

CHURCH HISTORY.

SECTION I.

1. Of which of the Fathers of the first three centuries have we authentic writings?

Name the most important of these writings.

What constitutes the value of their writings in the determination of Christian doctrine?

2. Name the principal Heretics of the fourth century, with their peculiar tenets and the councils which condemned them.

3. What errors are condemned in the following words of the Creed of St. Athanasius?—"The Catholic faith is this, that we worship one God in Trinity, and Trinity in Unity, neither confounding the persons nor dividing the substance."

At what period did these errors first show themselves?

SECTION II.

1. Give some account, with date, of any two of the following:—The Venerable Bede—John Huss—Peter the Hermit—Cranmer—Gregory VII.—Wareham—Hooper.

2. Give some account of the principal Crusades, with the date, leader, object, and success of each.

3. Who was Dunstan? at what period did he live? how engaged in the disputes between the regulars and seculars; which side did he take?

SECTION III.

1. In what sense is the English Church Catholic? in what sense Protestant?

2. What is meant by the Royal Supremacy? Show, from the 39 Articles, that this claim does not interfere with the spiritual functions of the clergy.

3. What is meant by the election, confirmation, and consecration of a bishop?

SECTION IV.

1. Is there any part in the ordination of her clergy assigned by the English Church to her members at large; and, if so, what is it?

2. Why must we conclude that the doctrines of the 39 Articles and of the Liturgy are coincident?

3. What is the meaning of the word Amen? from what language is it derived? Explain its force as occurring at the end of the Confession, Absolution, Lord's Prayer, Gloria Patri, and Apostles' Creed respectively.

SECTION V.

1. What is the difference of authority for the Creeds and the 39 Articles?

2. What is meant by Church Doctrine? what by Church Discipline? Name some of the articles which treat of each respectively.

3. Write out the 16th Article, entitled "Of Sin after Baptism." Explain the meaning of the word "*deadly*," and state against what error this article is levelled.

SECTION VI.

1. Mention the Church of England societies engaged in missionary work, the dates of their establishment, and the species of their operations respectively.

2. Name the Colonial Sees of Great Britain; which was the first, and which the last founded.

3. How was the American Church founded? Whence does it derive its Episcopate?

ARITHMETIC.

SECTION I.

1. Explain each step in the process of subtracting 728 from 1015.

2. Explain each step in the process of multiplying £352 17*s*. 2½*d*. by 856.

3. Explain each step in the process of dividing 1618 days, 14 hours, and 37 minutes, by 394, and express clearly the value of the remainder.

SECTION II.

1. Find by practice the value of 252 qrs. 5 bush. 3 pecks, at £4 17*s*. 8¼*d*. per quarter.

2. If 13 men do a piece of work in 29 days of twelve hours, in what time will 38 men do it? Explain each step in the working of this sum.

3. If £480 be paid for bread sufficient to serve 98 persons for 18 months when wheat is selling at 56*s*. per quarter, for how long will £235 find bread for 184 persons when wheat is selling at 48*s*. per quarter? Explain each step in the working of this sum.

SECTION III.

1. Explain how the greatest common measure of any two numbers is found, and reduce $\frac{885714}{999999}$ to its lowest terms.

2. Multiply $2\frac{9}{28}$ by $1\frac{1}{65}$, divide the answer by $4\frac{9}{14}$, and reduce the quotient to a decimal.

3. If 8 men perform a piece of work in 12⅓ days, in what time will 9 men and 5 boys do the same, if a boy can perform ⅝ of a man's work?

SECTION IV.

1. Multiply 67·163 by ·06432, and state upon what principle the decimal point is fixed.

2. Reduce 5 cwt. 3 qrs. 8 lb. to the decimal of a ton, and give the value of ·04375 of £1.

3. Find the discount upon a bill for £239 10*s*. 6*d*., payable 18 months hence, at 3¾ per cent. per annum.

SECTION V.

1. Extract the square root of 13½ to five places of decimals, and explain the process.

2. Find the cube root of 1.57 to five places of decimals, and explain the process.

3. Out of 17 consonants and 5 vowels how many words can be made, having 2 consonants and 1 vowel in each?

SECTION VI.

1. What is a cash account?

2. Describe the accounts which appear in a Ledger and the method of Double Entry.

3. Describe a set of books sufficient for a retail trade in small quantities of various articles, and the method of periodically ascertaining the state of it.

ALGEBRA.

SECTION I.

1. From $4a - x - (x - 2a) + (2a - 4x)$ take $2a - 5x - (2a - 2x) + (x - 2a)$.

2. Multiply $a^2 - 2ax + 4x^2$ by $a^2 + 2ax + 4x^2$, and divide $x^5 - 6a^2 x^3 + 5a^3 x^2 + 2a\ {}^4x - 2a^5$ by $x^3 - 2ax^2 + a^3$.

3. Add together the following fractions

$$\frac{2}{x + a},\ \frac{3a}{(x + a)^2},\quad \frac{3a - 2x}{x^2 - 2ax + 3a^2},$$

and reduce to one fraction the expressions

$$\frac{a^3}{(a + b)^3},\ - \frac{ab}{(a + b)^2} + \frac{b}{(a + b)}.$$

SECTION II.

1. Extract the square root of

$$x^4 + 4x^3 + 2x^2 + 4x + 1.$$

2. Solve the equations

$$\frac{2x + 4}{3} - \frac{7x - 9}{10} = \frac{x + 7}{7}$$

$$\left.\begin{aligned} \frac{3x - 5y}{5} + \frac{x}{2} &= 9 \\ \frac{6x + 2y}{8} - \frac{y}{2} &= 7 \end{aligned}\right\}$$

3. Solve the equations

$$\frac{a + x}{\sqrt{b^2 - x^2} - x} = c.$$

$$\left.\begin{aligned} \frac{x + y}{x - y} - \frac{x - y}{x + y} &= \frac{48}{7} \\ xy &= 12. \end{aligned}\right\}$$

SECTION III.

1. There is a house of 4 stories high: the ground floor is higher than

the first floor by 5 feet; the first floor is half as high again as the second; the second floor is double the height of the third; and the elevation of the whole is 40 feet. Find the height of each floor.

2. One boy says to another "If you will double the money I have got in my pocket you shall have three shillings out of it." This is agreed to, and done three times over:—but after the third time the boy finds that he has no money left. How much had he in his pocket at first?

3. Several persons, defendants in a lawsuit, have to pay the costs amounting to £800; but three of them become insolvent, and the rest have therefore each to pay £60 more. How many defendants are there?

SECTION IV.

1. Show that $2\frac{1}{2}$, $2\frac{7}{8}$, $3\frac{1}{4}$ are in arithmetical progression, and find the sum of 20 terms of the series.

2. Give an algebraical expression for the sum of a geometric series, and find the value of $1 + \frac{1}{4} + \frac{1}{16} +$ &c., *ad infinitum*.

3. Prove the rule for determining the number of combinations of (m) things taken (n) and (n) together.

SECTION V.

1. Find an algebraical expression for ascertaining the present worth of any sum of money due after a given time, and apply it to calculating the discount on £317 10*s*. 6*d*. for six months at 4 per cent.

2. How many ways are there of paying £7 with crowns and seven-shilling pieces?

3. Expand $\frac{1}{\sqrt{a-x}}$ to 4 terms by the binomial theorem.

MECHANICS.

SECTION I.

1. Explain what is meant by a mechanical advantage.

2. Define *force*, and distinguish between *force of pressure* and *force of motion*, giving the measure of each.

3. State the principle of *virtual velocities*, and show that the whole theory of machines may be deduced therefrom.

SECTION II.

1. Define the centre of gravity of a body, and explain why in *the balance* the centre of gravity must be at some small distance beneath the point of suspension.

2. A weight is kept in equilibrium upon a perfectly smooth inclined plane by a pressure parallel to the plane; determine the relation between the weight and the pressure by the parallelogram of forces.

3. State the third law of motion, and show that if two weights P and $P + p$ hang over a fixed pulley (supposed to be without weight or friction), the velocity due to p will be less than the velocity with which a weight equal to p would descend if falling freely, in the ratio of p to $2P + p$.

SECTION III.

1. A forge hammer, weighing a ton and a quarter, makes 55 lifts in a minute, the vertical height of each lift being a foot and a half; find the H. P. of the engine which tilts the hammer.

2. At what speed will an engine of 38 H. P. draw a train, weighing 50 tons, up a gradient of 1 in 100, neglecting the resistance of the air.

3. Explain why after a certain point the velocity of locomotive engines, sailing vessels, and falling bodies becomes uniform.

MENSURATION.

SECTION I.

1. A box 4 feet by 5 feet by 6 feet, outside measurement, holds 100 cubic feet of sand; find the amount of wood in the box.

2. Find the weight (in lbs. avoirdupois) of a block of stone whose specific gravity is 2.666...... and whose sides are 4 feet, 4 feet 6 inches, 1 foot 8 inches.

N. B. A cubic foot of water weighs 1000 oz.

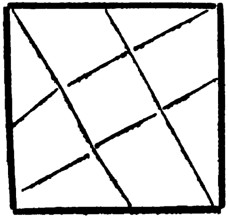
3. Find the superficial area of a hemispherical mound of earth, whose height is 10 yards.

SECTION II.

1. Explain the method of solving questions in proportion by means of a folding rule and a compass.

2. Prove that a sphere is two-thirds of its circumscribing cylinder.

3. If from the corners of a square, lines be drawn, bisecting the sides (as in the figure), show that the internal figure is a square, and find its area, that of the given square being unity.



SECTION III.

1. Find the area of a four-sided field from the following notes:—

0	530 to C	0
	149	62
250	29	
0	From A	0

2. Find the amount of gravel consumed in making a walk one yard wide round a circular flower-bed, the diameter of which is fifteen feet, supposing the gravel to be laid half a foot deep.

3. Prove that if the diagonals of a four-sided field make an angle of 30° with each other, the area of the field is equal to one-fourth of the rectangle contained by the diagonals.

GEOGRAPHY OF AFRICA.

RIVERS, WITH THEIR PRINCIPAL TOWNS.

(*Continued from page* 190.)

THE river systems of Africa, may be arranged into four great natural divisions: the rivers which enter the Mediterranean sea to the North; those which enter the Atlantic to the West; those which empty themselves into the Indian Ocean to the East; and the great basin in the centre, which may be termed the basin of Lake Tchad.

1. *Rivers entering the Mediterranean.*

1. Nile.—The Nile is the largest river of Africa. It is formed of three principal branches, the Bahr-el-Abiad, or White River, to the west; the Bahr-el-Azreh, or Blue River, in the centre; and the Tacazze, The River, towards the east. The Bahr-el-Abiad is the longest and largest, and is said to rise in 7° 40′ 5″ N. Latitude. With its tributaries, this river drains Abyssinia, Nubia, and Egypt, and has a general direction from South to North. It enters the Mediterranean by two mouths; formerly it had seven. The western mouth is called Rosetta; the eastern, Damietta; the space between these is termed the Delta. From the junction of the Tacazze to its mouth, a distance of 1500 miles, the Nile receives no tributaries. During the rainy seasons, however, numerous torrents from the mountains empty themselves into it.

The course of the river is impeded by numerous cataracts, one of which termed Assouan, is the southern boundary of Egypt.

The plains of Egypt owe their amazing fertility to the annual overflowings of the Nile. The rise of the river is occasioned by the periodical rains of Central Africa; it begins in June, and continues to increase till September, inundating the lowlands in its course. About the beginning of December the fields are left nearly dry, and are covered with a layer of rich brown slime. The lands are now cultivated. The Delta, during the inundations, appears like an immense marsh, interspersed with islands, villages, towns, &c., just above the level of the water.

The prosperity of Egypt depends, to a great extent, on the river keeping a certain medium level during its flood, if it does not ascend to a certain height, the land proves sterile; if it rises too high, the consequences are fatal—whole villages being sometimes destroyed. In 1818, the river rose nearly four feet above its usual level. The crops and cattle of the inhabitants were swept away, and they themselves were exposed to the greatest danger. Many of those who escaped the inundation died of famine. The water of the Nile is remarkably pleasant; the ancients considered this mighty stream as a divinity, and worshipped it. Length about 3500 miles.

Towns, &c., on the Nile.

(*a*). Damietta stands on the right bank of the Eastern Nile, about seven miles from the sea. It is rather a mean place, but contains some fine mosques. The country around is very fertile and well cultivated, producing lemons, figs, pomegranates, oranges, &c. There are manufactures of cotton cloth, towels, &c., and rice forms an important article of export.

(*b*). Rosetta is situated on the left bank of the Western Nile, about five miles from its mouth, and is considered one of the most pleasant of the cities of Egypt. It has a considerable trade with the Levant and with Europe, in silks, red cotton yarn, wheat, and rice. Natron, of extensive use in glass-making, the manufacture of soap, &c., forms an important article of export.

(*c*). Cairo, Kahira, or Grand Cairo, the capital of Egypt, and the largest city of Africa, stands on the right bank of the Nile, about twenty-five miles above the point of the Delta. It is built on a sandy plain, nearly a mile and a half from the Nile, and is of an oblong form, surrounded with walls. Viewed from a distance, it has a magnificent appearance; but when entered it has a totally different aspect. The streets are narrow, crooked, and unpaved; and the houses are built of earth or bricks. Some of the mosques are, however, very beautiful, being covered with arabesques, and ornamented with rich and elegant minarets. The city is commanded by a citadel, which is situated on its east side, and which completely commands it. There are public gardens, consisting of groves of vines, orange and lemon trees, and which, with the cemeteries, are frequented as promenades. The trade of Cairo consists of cotton, saltpetre, gunpowder, leather, and linen. The overland trade to India goes by Alexandria, Cairo, and Suez. Cairo possesses numerous schools of various kinds, and has still the reputation of being the best school of Arabic literature. In 1798 Cairo was taken by the French, under Buonaparte, after defeating the Egyptian army in the battle of the Pyramids. In 1801 the French were compelled to evacuate the city by a combined British and Turkish force. The population of Cairo is estimated at 240,000.

(*d*). Ghizeh or Giza, on the west bank of the Nile, near which are the celebrated pyramids of Egypt. These mighty structures, some of them the most stupendous masses of building in stone ever reared by human hands, extend southwards from the neighbourhood of Jizeh, to a distance of between sixty and seventy miles. The base of the largest pyramid, that of Cheops, covers an area of thirteen and a half acres—a space of ground equal to Lincoln's Inn Fields, London.

The largest of the numerous sphinxes found in Egypt was near the pyramids of Jizeh or Giza. The body is formed out of the solid rock, and the paws, which are all of masonry, extend forwards about fifty feet from the body. This was an emblematical figure, composed of the head and breasts of a woman, the wings of a bird, the legs and claws of a lion, and the body of a dog. It is said to have been the Egyptian symbol of divinity.

Near to Ghizeh, Napoleon defeated the Mamelukes, 1798, in what has been termed the battle of the Pyramids.

(*e*) Thebes. The ruins of Thebes, "with its hundred gates," in Upper Egypt, cover an immense space of ground. They are situated on both banks of the Nile, from the midst of which rise the villages of Karnac, Luxor, and Gornore. No description can give an idea of the size, beauty, and grace of the sculptures, pillars, buildings, &c., of this far-famed city. The temple is without a parallel in magnitude and in beauty; avenues of sphinxes lead to it, one of which is said to be two miles in length. On the western side of the river is the Memnonium or Temple of Memnon, which contained the celebrated colossal statue of Memnon, which was twenty six feet wide between the shoulders; and fifty-four feet round the chest. At a short distance are two statues in a sitting posture, one of which possessed the real or imaginary property of emitting harmonious sounds, as soon as it received the first rays of the morning sun. The legend says that this statue was the son of Aurora, which at the break of day gave forth sounds to welcome the approach of his mother.

(f) Syene or Assouan, the upper frontier town of Egypt. Here are the quarries from which the obelisks and colossal statues of the Egyptian temples were dug.

2. Ampsagas, modern name Rummel, sometimes called Wad-il-Kibir, "Great River." This formed the boundary between Mauritania Cæsariensis and Numidia. It rises on the southern slope of Atlas, flows from W. to E. over a vast plateau, turns to the N. and enters the Mediterranean.

Towns.

Constantina the capital of the French province of Constantina in Algiers, is built on an elevated rocky peninsula, about 45 m. from the Mediterranean. The houses are low and without windows, and the streets are narrow and badly laid out.

This town occupies part of the ancient Cirta, the capital of Numidia and the birth place of Masinissa and Jugurtha, the Numidian kings. After the death of Jugurtha, whose wars have been immortalized by the pen of Sallust, Cirta, with the rest of Numidia, passed into the hands of the Romans. It afterwards received the name of Sittianorum Colonia, from a general of the name of Sittius, to whom Cæsar gave it as a reward for his services in Africa. At a later period it was termed Constantina in honour of the Emperor Constantine. It was attacked by the French in 1836, and taken by them after a murderous assault in 1837. The population is said to be about 20,000.

SCHOOL-ROOM ADDRESS.

ANSWERING QUESTIONS.

I SUPPOSE, when you are asked a question, you all wish to give the right answer. But some of you never seem to try. If you would really set to work when you are asked a question, and think about it, and do your best, you would find you could answer much better than you fancy. There are three ways of answering rightly—by memory, by sense, and by luck. You can see that luck is not to be trusted to at all. If you speak at random and take your chance, of course you may happen sometimes to hit upon the right answer, and even to get to the top of the class. I should think you would be ashamed to get up in that way; but whether you were or not, you would be pretty sure before long to make some stupid out-of-the-way answer, that would show everybody that you were only guessing and did not really know anything about it. Then you would have to go down again as fast as you went up, your teacher would be displeased, your companions would laugh at you, and you would see that luck might make a show for a minute or two, but was of no real use. Now for the two other ways.

Memory and sense go so well together that I scarcely like to take one without the other, and I advise you to do your very best to get both. If you have what is called a good memory, you will find it a great help to you. It will be much easier to you than it is to others to remember what is said to you, or what you read. When you are asked a question, the answer, if you have ever been told it, will come into your head directly, and you will get credit with very little trouble. But it will not do to trust to your memory by itself. As long as you are only asked questions you are accustomed to, that have answers belonging to them as it were, you will get on very well; but if you are asked a new question, or even an old question in a new shape, so that you have not a ready-made answer to match it, you will be quite at a loss unless you have *sense* to find out or make out the answer for yourself. In questions of this kind, a boy or girl with a worse memory, who is accustomed to *think*, will very likely pass you. On the other hand, if you find that you like these sense questions, and can often make out the answers, but that you are very apt to forget what you read, or what is told you, and that it is very difficult to you to learn anything by heart, and to remember dates or the names of people and places—do not give it up—do not say to yourself that you have a bad memory, and that you cannot help it. Perhaps it only wants taking care of, and, even if it *is* a bad one, people can do a great deal to mend their memories, as you will find if you are wise enough to try. First, be very attentive to the thing you want to remember—see that you understand it, and put it well into your mind to begin with. Then you must look for it every now and then, to see whether it is still there. If you cannot find it directly, hunt through all the corners of your mind—very likely you will recollect it in a little while, and then you will remember it better than you did before; but, if it is quite gone, you will have to wait till you can get your book, or persuade somebody to tell it to you again. Suppose a man had a great many things given to him, and that he put them all into a cupboard, and never thought about them any more for a long time, and then suppose that he went to the cupboard and found that some of them were gone altogether, that some of them were almost spoiled with lying by, and that the rest were in such disorder that he could not find what he wanted till it was too late. Would not you say he was very foolish—that he did not deserve to have anything given him unless he took more care of it? Now some people seem to use their minds just as such a man as that would use his cupboard, and when any one asks them a question they look just as startled and puzzled as you might fancy him doing when he opened the door. Now suppose that you have been asked a question—that you have listened to it carefully—that you have thought about it for a minute, and that you find you really cannot answer it. Do not make a bad guess—do not stand silent and stupid—do not try to catch a whisper from somebody else, or look about as if you expected to see the answer on the walls or the ceiling; but when you have made up your mind that you do not know, speak out and say so at once, and then some one else will give the answer, and you can listen and try to remember it for another time. One thing more—you may think you know the right answer, and not be sure. If you have a reason for thinking you know, I would advise you to give your answer. It may be something like guessing, but never mind—it is different from mere idle guessing, and your teacher will soon find that out, and will tell you how far you are right or wrong. But then you must be very careful not to guess in a hurry, without a reason for what you are saying.

[Extracted from "Ten Schoolroom Addresses, edited by J. P. Norris, M.A., Trinity College, Cambridge;" a very excellent and cheap little book, which we recommend, as furnishing models for extempore addresses.]

ON EXAMINATIONS.

About half a century ago examinations were nearly unknown in England. In the university of Oxford, the examination for degrees was once almost a farce; but for many years past, a regular examination of the candidates for the bachelors' degree has been established at Oxford. In the university of Cambridge, also, within the present century, the examinations for degrees have been improved, and the subject-matter of the examinations has been extended. There are now regular examinations in the two universities of Oxford and Cambridge, and in all the colleges which are connected with these universities. The University of London has its examinations; and University College, London, King's College, London, and most probably all proprietory schools, have their periodical examinations. The principle of examination has been recently extended even to officers in the army, and to the masters of merchant ships. A public place of education without periodical examination, or admission into a professional body without examination, is now in fact an exception. Medical practitioners, and solicitors or attorneys, undergo an examination before they can be admitted to practice; and they must give satisfactory proof that they possess a competent amount of professional knowledge. If an examination, however well conducted, is not always a security that those who pass possess much sound knowledge, it is, or may be, made a sufficient security that they are not grossly ignorant. One class of legal practitioners is not required to undergo any examination: a barrister may still commence his profession with as little knowledge of law, or of anything else, as he pleases; and he may in a very short time, through favour of political friends, fill important places for which there is no evidence at all that he is qualified.

There is no other way of ascertaining the proficiency of persons in any branch of knowledge than by examinations. There will always be some persons who, from love of knowledge, from a desire to get on in the course of life which they have chosen, from a feeling of duty and other laudable motives, will sufficiently master any subject which they undertake to learn. There is another set of persons who have good-will enough to do what they know they ought to do, but whose indolence requires the stimulus of compulsion in some form. With the prospect of an examination before them, the hope of honourable distinction, or the fear of disgrace, such persons can be roused to do what they otherwise would not do.

But it is not only for the indolent that examinations are useful. They are or may be made useful for the diligent as well as the indolent, in other ways than as a stimulus to exertion. An examination implies an inquiry into the learner's proficiency in some given subject or subjects, on which he has received instruction, or which he has studied himself, or both. An examination at large without any reference to a definite subject of study could not be of any use. The nature of an examination is determined by the matter of the examination. The purpose of it is to ascertain, by question and answer, or by proposing something to be done in a given time and without any assistance, what the person under examination knows of the matter in which he has received instruction, or which he has studied. Plain and simple as all this appears, it is a very difficult thing to conduct an examination well, particularly by questions; and no person, who is not himself engaged in teaching, or has not had experience in teaching, can make a good examiner.

The first thing that a man who undertakes to examine should think of, is this. The examination must relate to the subject or subjects which the person under examination has been studying, and not to things which he has not been studying. A wonderful discovery! some self-sufficient examiner may say: I must examine in what has been studied or taught, and not in what has not been studied and not taught. Certainly this is what you ought to do; and it is what you very often do not do. It is not uncommon for an examiner to be invited to conduct an examination, who, though informed what the matter of study has been and what are its limits, instead of confining himself to these, asks questions on matters which are out of these limits. The examination papers of many of our colleges and other places will supply abundant examples of this kind of questioning, which defeats the very end and purpose of an examination. An examiner who does not duly consider what he has to do, puts down a number of questions at random, sometimes from indolence, sometimes from ignorance, sometimes from both. Nothing is so easy as to ask idle questions: few things so difficult as to search a person's knowledge by well-directed interrogatories. A good set of questions points out to him who is examined, the principles or facts which are most important for him to know. If he has studied well, or has been well taught, he finds in the questions proposed an opportunity of producing his knowledge and of trying his strength. If the questions are vague, or turn upon unimportant matters, or wander from the subject, he has not the opportunity of proving that he has studied well, or of doing justice to those who have directed his studies. The questions, also, instead of being a guide to those who may hereafter be examined, only tend to divert them from a proper course of study to reading as vague and purposeless as the questions which lead them astray.

Examinations must differ according to the age of the parties examined, the purpose of the examinations, and the matter of them. These remarks have mainly reference to examinations in colleges and in schools, and to examinations into the qualifications of masters. In all these cases there are, or ought to be, certain subjects of examination, confined within certain limits, on which subjects the persons examined have received instruction, or which they have studied. The advantage of a careful study of a limited amount of matter in early years is very great. A youthful mind is not capable of seizing and apprehending a large mass of matter: it must first be disciplined and strengthened by being exercised within a limited circle. It must be trained to a right apprehension of fundamental principles, and directed to the application of them. By acquiring a complete mastery over some subject, or so much of some subject as it has power to apprehend and to retain, the mind is taught to see the meaning and the value of exact knowledge; and the strength which is acquired by this discipline, which is suitable to its faculties, is the only sure means by which those faculties can be expanded in mature life. The kind of questions that should be put to a man of ripe years with a view to test his knowledge, would in many respects differ from those put to boys or to young men. It ought to be assumed in all good examinations for young persons, that they have received instruction within some particular limits, well defined, or have confined their own private studies within such limits. An examiner may therefore ask many questions on small or apparently unimportant matters, if such matters are a part of that whole, which it is the business of the student to master as a means of discipline and self-improvement. No question, however minute, if it is really a part of the subject-matter of his studies and necessary to its full understanding, is foreign to the purpose of the examination: and no question, if it is beyond this subject-matter, is properly asked, however pertinent the question might be under other circumstances.

An examiner then can only discharge his duty well, when he has a clear comprehension of the extent of matter which the student has been engaged on, and when he has thoroughly apprehended and mastered it himself, in such way as he would do if he were going to instruct young persons in it. The vague, impertinent, and idle questions with which examination-papers are often filled, are the clearest evidence of the indolence of an examiner, of his ignorance, and of his carelessness. He often asks a question simply because he can answer it himself; or he asks a question for the purpose of displaying his own knowledge; or he asks a question, the proper answer to which could only be given in a book or a treatise. He asks for that which a pupil cannot answer, and ought not to be able to answer; he asks for that which no person in the time allowed, whatever his knowledge might be, could answer in a satisfactory manner. His purposeless questioning, his disjointed, ill-assorted queries, are merely the evidence of his own disordered and incoherent knowledge. The consequences are most pernicious: they frustrate, so far as they go, the very purpose for which examinations are instituted, and make them worse than useless: they make them, instead of being a motive for acquiring exact knowledge on that subject which the learner professes to study, an inducement to load himself with extraneous, undigested and indigestible matter.

In many subjects the matter itself is some security against foolish questions; some security, but not enough. For instance, if a man had to examine on arithmetic, he could not well ask questions on history or geography, or any other foreign matter; yet he might still put very bad questions. But a man who examines boys on some given subject, as, for instance, a book of a classical author, which the boys ought to know well, if they have been taught well, and have used their diligence, may, instead of examining them on the particular book, which he has not taken the pains to read, give them a number of questions which have no relation whatever to the matter of that book which they have been studying. This is just as perverse as it would be for an examiner in arithmetic to ask questions on history or on geography. He does not inquire about what the pupils have been trying to learn and ought to know; but he inquires about that which they could not know, unless they had been neglecting that which it was their business to learn.

Of all the idle and unmeaning questions of which an examiner, who knows not his duty, disburdens himself, questions on what is called history are the most striking examples of absurdity. It is impossible to propose a reasonable set of questions on history, unless the particular portion of history on which the examination is to turn, has been marked out beforehand for the student to master. If a student is required to master what is called a general outline of history (outline enough it often is; a shadow and not a substance), there should be some manual in reference to which the examination should be made. And if a sufficient manual cannot be found, it is better to wait till one appears, than to compel a poor student, who has so many things to learn nowadays, to embark on this wide ocean of human acts and human suffering without chart to guide him on any determined course. We see from questions actually proposed that a student is liable to be called upon to show his knowledge of all history from the creation of the world to the passing of the last act for the reform of the representation of the British House of Commons. And he is not merely expected to know certain great events, as the building of the Tower of Babel, the discovery of America by Columbus, or the battle of the Nile; or the acts of certain great personages, as Alexander, Cæsar, or Napoleon; but he is expected to carry in his head some facts, the most trifling and unimportant that a trifling examiner can select, facts which no man of sense would encumber himself with, because he knows that they are of no use; and if he had occasion for them, he goes to consult a book, as he would consult an almanac to know what is the time of high water at a given port, or to ascertain what stamp he must buy if he is going to give a receipt for 99*l.* 19*s.* 11¾*d.*

It would be very easy to select examples of questions that will justify every remark that has been made here. The examples may be found in the examination-papers that issue from colleges and universities. One instance shall be given. Some years back, among a number of historical questions,—a sample of as much confusion of ideas as if a very Babel of interrogatories were contending in the examiner's head,—

students, most of whom would be much under twenty years of age, were asked—to explain the constitution and procedure of the Court of Star Chamber. A modest question, indeed. But who believes that the examiner could answer it? The history of the origin of the Star Chamber is not very clear: it involves some difficult questions. A good octavo volume might be written upon it. And as to its procedure, it would be much more appropriate to ask the student to explain the procedure of the Court of Chancery, which still exists; though most reasonable persons will think that if the examiner wishes to know what that is, he had better devote himself to a three-years' study of Chancery procedure, and a twenty-years' practice in the Courts.

ON LATIN ETYMOLOGY.

No. II.

In any remarks upon the study of the classical languages it is useful to have a point of departure from which to measure our progress. Now the magnitude and expense of Forcellini's—or, as Englishmen commonly miscall it, Facciolati's—Lexicon, necessarily prevent a very extensive use of it. In addition to this, there is a belief in this country that the Germans have made a great advance upon the Latin scholarship of the last century, and, consequently, that a preference ought to be given to their lexicographers. In this belief we do not concur, but we will pay so much respect to it, as to take notice of what the Germans have said in proposing any new view, or endeavouring to re-establish what has been too hastily set aside. The Handwörterbuch of Dr. G. H. Lünemann has a very extensive circulation in his own country, and was avowedly made the basis of the "Complete Latin-English Dictionary" published by Mr. Riddle in the year 1836. Hence, if we find errors in Lünemann's book, it becomes doubly important that they should be noticed.

Now one of the most striking novelties is his creation * of a new Latin proposition *po*. We do not speak of the use of *po* for *post* in such words as *pomœrium* and *pomeridianus*; but of a second inseparable preposition, which he connects with the Greek ποτι or προς, and translates "to" or "by" (*zu*, *bei*), with the further remark that the particle expresses power or possession, or that it strengthens the notion of the verb to which it is prefixed. The words in which he finds this preposition are *polleo*, *polliceor*, *polluo*, *pono*, *possideo*, and *possido*. Of these, the first is a compound, he tells us, of *po* and *valeo*. Now we see a more simple, and, as it seems to us, a more satisfactory origin of this word. Pursuing the course which we recommended in the preceding paper, we first take the verb in its oldest known form, and then compare it with other examples of the same parts of speech which most closely approximate to it as regards termination. Now Festus tells us that it was originally written *polere*, with a single consonant. This word *polere* is very similar in ending to *calere, olere, solere.* But *calere* is only the intransitive form corresponding to the obsolete *candere*, the essential syllable of which is more familiar in *candidus, candela, incendo*, &c.; *olere*, again, has for its allied substantive *odor;* and *solere** might easily be proved to be closely related, in meaning as well as form, to *sedere, sidere, solium, sella*, &c. The simple fact is, that the Roman tongue and Roman ear had a difficulty in distinguishing between the letters *l* and *d*, even at the beginning of words, and still more at the end of the root-syllable. Thus Οδυσσευς became to a Roman *Ulixes; lingua* and *dingua, lacruma* and *dacruma, lautia*, and *dautia* were pronounced almost indifferently. No wonder then that we find *scando, pando, mando* in immediate connection with *scala, palam, mala;* or that Pompey, as we are expressly told, always wrote *kadamitas*, where the ordinary mode of spelling was *calamitas* (Marius Victorinus, p. 2456, *l.* 32). Relying on these considerations, we may, so far as form is concerned, treat the first syllable of *polleo* as an equivalent for those seen in *pondus, pendo*, and *pendeo*. The meaning also suits, subject to the admission that *polleo* and its derivatives carry with them the idea of weight only in a figurative sense; as *vir pollens potensque*, " a man of great weight and power;" and in Tacitus the words, *Langobardi ad eum defecere, quibus additis præpollebat*, tell us that " by the transfer of the Lombards to his party, he preponderated."

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* Or he may have borrowed the idea from those who preceded him. Our quarrel is with the doctrine.

The two verbs *polliceor* and *polluo* could have caused Lünemann little trouble, had he not been prejudiced by a desire to find his new preposition in as many words as possible. He himself admits that, in the first syllable of *porrigo* we have only a variety of the common preposition *pro*, and of course before an *l* the final *r* of *por* would be assimilated, as in *intellego, puella, tenellus*, from *inter, puera*, and *tener*. It is but a slight difficulty that the Latin language already possessed *proluo*, for the coexistence of two different forms identical in origin is not unfrequent in language. Thus, to say nothing of *pendeo* and *polleo* already noticed, there occur in Latin *subrigo*, as a transitive, and *surgo* as an intransitive verb, both being formed by prefixing *sub* to the same simple verb *rego*. It may be noticed, also, that the sense of the substantive *proluvies*, in Lucretius and Virgil, is more in keeping with the power of *polluo* than with that of *proluo*.

In *pono, posui*, &c., there is no good reason for suspecting the presence of any preposition. The greater length of the vowel in the imperfect tenses, *pōno, pōnebam*, &c., is accounted for by a principle familiar to the writers on Greek grammar, and to be found also in the Latin. Thus *duco, dico, fido, nubo, repo*, arise from a base with a short vowel, just as φευγω, φαινομαι in Greek flow from simpler forms φυγ (εφυγον) φαν (φανουμαι), &c. An attention to this fact would have prevented the surprise so commonly expressed at the supposed irregularity in quantity of *dux*, *dŭcis*, and *edŭcare*; *vatidĭcus* and *fatidĭcus*; *fĭdes* and *perfĭdus*; *connŭbium* and *pronŭba*; and would also have explained the mode of writing the Greek ἑρπω. As to the appearance of the *n* in *pono*, beside the *s* of *posui*, it matters little to the present question whether it be a mere substitute for *s*, such a change being far from rare; or whether it be added to the base *pos*, as in *cerno*, *sperno*, *sterno*, *temno*.

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* To sit, is a position of some permanence; and so is suited to denote a custom. Comp. the German *sitte*, " custom," and our *wont, wonted*, which are closely related to *wohnen*, " reside."

We have now but *possido* and *possideo* left; and we suspect that it was from these very words that the inventor of this preposition *po* was led to attach to it the meaning of power or possession (eine macht oder eine besitz). Be this as it may, under *possessio* Lünemann rightly observes that possession, in the Latin use of the word, is carefully to be distinguished from the ownership (wohl zu unterscheiden von dominium). Indeed, without the knowledge that *possidere* implied power over property rather than a title to it, little progress could be made in understanding the history of the agrarian disputes in Rome, as the very phrase *possessores agri publici* would otherwise involve a contradiction. The strangest point is, that feeling this, Lünemann should have ventured to attribute different origins to the first syllables of *possideo* and *possum*. It is true, that the actual existence of *potissum*, *potis est*, precluded all doubt as to the origin of *possum* and *potest*, and thus saved them from being referred to the imaginary *po*. But the origin of *possum*, and we may add *potior*, being undisputed, we must claim the same origin for the initial syllable of *possido* and *possideo*.

But with *polleo* Lünemann* thinks proper to connect the word *pollex*, "thumb." Now we are ready to admit that a suffix, *ec* (or in the nom. *ex*), is added at times to verbs—as *vortex* or *vertex* and *apex* (the latter, not from *ap* the base of *apiscor aptus*, but rather from *ac*—"sharpen," which is familiar in *ac-esc*,—*ac-ido*,—ακ μη, &c.). Still we must keep in view that, in *remex*, *exlex*, the final portion is of an origin totally different—the former containing the base *ag* of *agere*, the other the substantive *leg* (n. *lex*). And in the present case, the fact of the next finger to the thumb being called *index*, affords a useful clue. Lünemann, oddly enough, is quite silent on the origin of this word *index*. But we believe it is a point agreed upon among scholars, that the syllable *dec*, which constitutes the latter part of this word, is the same which enters into δεικνυμι, or without the strengthening ι in the Herodotean απεδεξα. Nor is the root limited to Greek words. The Latin verb *dicere* is well known to have been written *deicere* in old times; and the sense of "saying" readily flows from that of "showing;" indeed, *docere*, "to teach," of the same origin, is in meaning an easy stepping-stone from the one idea to the other. Moreover *dig-itus* is, by Lünemann himself, deduced from the base δεικ, and there are those who find in *dec-em* only a plural word signifying fingers. We may therefore safely adhere to the common doctrine, that the forefinger is called *index*, as being the "pointer." The question then, which naturally suggests itself is, whether *pollex* was not also deduced from some verb. The nouns *obses*, *deses*, *redux*, are evidently formed by the mere agglutination of a preposition and the base of a verb; and will therefore support us in the view that *pollex*, so far as regards external constitution, may be referred to the preposition *pro* and *lac* of the obsolete *lacio*, better known in the compounds *illicio*, *elicio*, *pellicio*. The adjective *illex* actually exists, and, fortunately for us, is deduced by the German lexicographer himself from *illicio*, so that we need entertain no scruple, if the meaning which flows from the union of *pro* and *lac* be adapted to our purpose. That meaning would be "drawing forth." Now it would be difficult to give a better definition of the thumb's office than is expressed in this phrase. Any finger can *push*, but it commonly requires the united labour of a thumb and finger to *pull*, so that the thumb has a special title to be distinguished from the ordinary fingers by the name of "outdrawer." As the old song says: He put in his thumb, and pulled out a plum.

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* In this we find he has the sanction of Forcellini, and even of a Roman writer; but we still adhere to what we have written.

In the same page of Lünemann we find *pollingo*, without the slightest attempt at etymological explanation, not even so much as an effort to call in the aid of the inseparable preposition; and yet the origin of the word is patent. He explains the verb as signifying "to wash corpses and prepare them for the funeral pile." This is precisely what our language would express by "laying out a corpse;" and "laying out" is a literal translation of the verb *polling*, if we hold *pol* to be as before the preposition *pro*, and *ling* to be the Latin equivalent of *leg* in the German *leg-en*, "to lay." It was only to be expected that *ling-o* rather than *leng-o* would be found in a language which possesses *fingo*, *pingo*, *mingo*, *lingo*, *stringo*, *tingo*, *ringor*; and, we believe, not a single example of a verb ending in *engo*. Nor let it be objected that we are forcing into the Latin tongue a root that is foreign to it. *Lectus* "a bed," is referred by Lünemann himself to *leg-ere*, and translated "lagerstatt zum schlafen," as if he wished to imply that the notion of "laying" exists in *lectus* as well as in his own *lager*. Such a doctrine would, we believe, be perfectly correct; but we fear to attribute it to the German scholar, because he himself, under *lego*, gives us nothing to justify such a translation. In Liddell and Scott's Greek Lexicon it is boldly and truly stated that "to lay" is one of the senses of the verb *λεγειν*, and that λεχος and *lectus* are akin to it.

With the same page of the German lexicon still open before us, our eye falls upon an article:* "Pollubrum oder polubrum, i. n. (polluo) ein waschbecken, Fab. Pict."

One cannot readily believe that "a basin for washing" should have for its name a word, which, if the given etymology be correct, ought to signify a means of pollution. But we will endeavour to set Lünemann right by matter taken out of his own book. *Pelluviæ* he derives from *pes* and *luo* (say rather *lavo*), and translates "water for the feet." *Malluviæ* and *malluvium* he, as well as everybody else, derives from *manus* and *luo*, and translates "wasch-wasser," and "wasch-becken, die hände zu waschen." It is clear then, that *pollubrum* is "a vessel for washing the feet;" in plain English "a foot-tub:" and that the first syllable represents *ped-*, "a foot," the final *d* assimilating, as usual, with the adjoining liquid, while the presence of an *o* rather than *e* may possibly be due to Greek influence, or, what is more likely, to assimilation also. But this brings us to a principle of the higher etymology, upon which we must be brief.

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* Nearly the same is in Forcellini.

The vowels also have their affinities, and there is a tendency for the vowels in adjoining syllables to approximate, which tendency in some languages becomes a law. It is in obedience to this law that we find such words as *Alabama*, *Tennessee*, *Mississippi*. In the languages of the Tartar stock especially, the law of similar vowels prevails to a great extent. It is also well-marked in the Icelandic. Thus, the moment that the verb *kalla* "to call," or the substantive *bakar* "baker," take a suffix *um*, which happens to denote "we" in verbs, and a dat. pl. in nouns, we have not *kallum, bakarum*, but *kollum*, *bokurum* ; *o* being closely related to *u*. There are more traces of such action in the classical languages than is commonly supposed. One example is in the Greek masculine substantives in *ο*, as *νομο-ς*, *τοκο-ς*, *γονο-ς*, from verbs whose vowel is *ε*; whereas, from the same verbs, the neuter nouns were originally *νεμ-ες*, *τεκ-ες*, *γεν-ες*, whence the genitives *νεμε-ος*, *τεκε-ος*, *γενε-ος*, &c. CLAUDIUS.

Correspondence.

(The Editor begs to state distinctly that he is not answerable for the opinions of his Correspondents.)

BOARDING SCHOOLS FOR POOR GIRLS.

LETTER V.

MY DEAR FRIEND,—I will now give the details of instruction, having already furnished you with those on household management, and then conclude my correspondence with a few remarks on the important subject of dress. I will first sketch the general arrangement of the day for both classes. At six all rise, and silence is required from each girl till the duty of private prayer has been performed. At half-past six all are expected to be ready for their appointed tasks—in the kitchen, the bedrooms, or schoolrooms,—one of which is to be put in order for the pupils by seven when their studies begin.

The matron and teacher superintend the household work while the governess attends to the pupils.

At eight all meet at breakfast, after which the lessons learned the evening before are repeated in either schoolroom. At ten the psalms, prayers, and lessons are read; and at one both classes meet again to dine, and at six to drink tea; they have little communication at other times during the week. On Sundays, the elder pupils are engaged with myself and friends in imparting religious instruction to their younger and less advanced schoolfellows of either class. I need hardly say that the teachers often learn more by teaching than the taught. I am sure every Sunday-school teacher will bear witness with me to this truth—more blessed the giver than the receiver. Between breakfast and dinner, those not engaged in repeating lessons, or reading history—are occupied in needlework in both schoolrooms—indeed, the course of instruction for the two classes is very similar; but the studies of the pupils are carried much further than those of the scholars, whose time is necessarily much occupied, and more usefully, in household duties. I only wish to teach the scholars reading, writing, and arithmetic; to give them a general idea of history, geography, and grammar, especially a correct pronunciation; and, if they have a taste for it, a little knowledge of singing: these are all very useful in the nursery. The education the pupils receive comprises a more thorough knowledge of these acquirements, the study of French and drawing—fitting them for nursery governesses in families of higher rank then their own, and for a more important post, that of teaching and training those in their own rank as they have been taught and trained themselves. I will not trouble you with the arrangement of the time-table. I trust you will believe that the more valuable parts of education are most considered, that the studies are varied as much as possible to prevent weariness. In the summer, the pupils walk twice a day with their governess; in the winter, only once; the scholars do not take regular walks, but have a playground exercise, which is used also when required, for laundry purposes. After dinner, the scholars resume needlework; but are formed into classes during the afternoon, for instruction and examination. At five they learn lessons for the next day, consisting of a verse of the Bible, a hymn, a portion of Scripture history, of grammar, history, geography, or poetry, in turn; and they do sums, write an exercise from dictation, or a composition on some useful subject. The latter practice I have found of great use in both classes; for it exercises their memory in reproducing what they have already learned, tests their proficiency in orthography and the right construction of their sentences, and brings into action their thinking powers.

Memory is easily cultivated, but to put down the thoughts correctly on a given subject is not an easy acquirement, even to those who have the power. Of course I do not mean that this or any other method will give good judgment; but if the compositions be well considered, and a reason be required for each statement and opinion, and there be any such power in the mind, it will be brought out and strengthened.

Another plan I have is to engage them in drawing out genealogical and chronological maps. To make these plain to them, I teach them first to draw out their own family pedigree. To imprint the different races of kings of England on their minds, I teach them to paint each family a different colour. Yellow I have chosen for the Norman line, and blue for the Saxon: these being united in the person of Matilda, the Plantaganet line becomes green; this is changed into pink and white for the houses of York and Lancaster. The line of Tudor joining these takes a paler hue of pink; and scarlet, being the colour of blood, is appropriate to the Stuarts.

True blue, the colour of England, marks the Hanoverian dynasty; and the Prince of Orange has his own colour. These maps are equally useful in both schoolrooms, but the pupils draw out the collateral branches more fully for themselves than I have cared to do for the scholars' room.

Map-drawing is one of the most interesting modes of teaching geography; and, though the maps may be drawn badly, the very attempt is useful in teaching them to aim at neatness and correctness. I would say the same of drawing, for I do not find talent for form and colour a common gift. French I consider an accomplishment, and therefore allow it only to be studied after the more important avocations of the day have been completed. There is little danger of it being neglected; but the English education I am so anxious to give them would be little thought of, were it not made so evidently the first object by myself and friends, whose higher station of life gives weight to our advice and teaching.

I must say a few words on Sunday lessons, which I feel to be one of the greatest difficulties of a school of this kind. If they are too easy, there will be time for idleness; if too difficult, Sunday will be a dull day, which is a worse evil. Unintellectual minds cannot find occupation for themselves; and as the generality of school-girls are unintellectual, I suppose it is necessary to employ them a good deal in task work—at least I have found it so, though I regret the necessity. School therefore commences, as usual, at half-past eight, and all the Scriptural lessons learned during the week, hymns, &c., are repeated; also those previously learned, catechism, &c., are said in classes, but no new lessons, except the collect for the day. After dinner, and after second church, they are occupied in writing out answers to questions prepared for them on the services of the day, reading interesting books given to them only on Sundays, either for their own instruction or aloud for the benefit of the younger or more ignorant girls; and, in the evening, generally in singing psalms and hymns—a never-failing and very innocent amusement.

Yours, &c., M. E. R.

Extracts.

CONSTRUCTION OF SCHOOL BUILDINGS.—"The voice of Nature forbids the infliction of *annoyance, discomfort,* or *pain,* upon a child, while engaged in study. If he actually suffers from position, or heat, or cold, or fear, not only is a portion of the energy of his mind withdrawn from his lesson,—all of which should be concentrated upon it;—but, at that undiscriminating age, the pain blends itself with the study, makes part of the remembrance of it, and thus curiosity and the love of learning are deadened, and turned away towards vicious objects. This is the philosophy of children's hating study. We insulate them by fear; we touch them with non-conductors; and then, because they emit no spark, we gravely aver that they are non-electric bodies. If possible, pleasure ought to be made to flow like a sweet atmosphere around the early learner, and pain be kept beyond the association of ideas. You cannot open blossoms with a north-east storm. The buds of the hardiest plants will wait for the genial influence of the sun, though they perish, while waiting.

"The first practical application of these truths, in relation to our Common Schools, is to School-house Architecture,—a subject so little regarded, yet so vitally important. The construction of school-houses involves, not the love of study and proficiency only, but health and length of life. I have the testimony of many eminent physicians to this fact. They assure me that it is within their own personal knowledge, that there is, annually, loss of life, destruction of health, and such anatomical distortion as render life hardly worth possessing, growing out of the bad construction of our school-houses. Nor is this evil confined to a few of them, only. It is a very general calamity. I have seen many school-houses, in central districts of rich and populous towns, where each seat, connected with a desk, consisted only of an upright post or pedestal, jutting up out of the floor, the upper end of which was only about eight or ten inches square, without side-arms or back-board; and some of them so high that the feet of the children in vain sought after the floor. They were beyond soundings. Yet, on the hard top of these stumps, the masters and misses of the school must balance themselves, as well as they can, for six hours in a day. All attempts to preserve silence in such a house are not only vain, but cruel. Nothing but absolute empalement could keep a live child still, on such a seat; and you would hardly think him worth living, if it could. The pupils will resort to every possible bodily evolution for relief; and, after all, though they may *change the place, they keep the pain.* I have good reasons for remembering one of another class of school-houses, which the scientific would probably call the *sixth* order of architecture,—the wicker-work order, summer-houses for winter residence,—where there never was a severely cold day, without the ink's freezing in the pens of the scholars while they were writing; and the teacher was literally obliged to compromise between the sufferings of those who were exposed to the cold of the windows and those exposed to the heat of the fire, by not raising the thermometer of the latter above ninety degrees, until that of the former fell below thirty. A part of the children suffered the Arctic cold of Captains Ross and Parry, and a part the Torrid heat of the Landers, without, in either case, winning the honours of a discoverer. It was an excellent place for the teacher to illustrate one of the facts in Geography; for five steps would have carried him through the five zones."—*Horace Mann.*

INVESTIGATION OF THE LAWS OF INDICES.

(*Continued from p.* 217.)

The whole of the six laws may now be considered established when m and n are positive integers, and we have next to show that they are true when one or both of the indices are negative integers.

In I. let m be positive, but n negative and $= -q$,

$$\therefore a^m \times a^n = a^m \times a^{-q} = a^m \times \frac{1}{a^q} = \frac{a^m}{a^q} = \text{(II.*)},\ a^{m-q} = a^{m+n}, \text{(for } -q = n.\text{)}$$

Next, let n be positive, but m negative and $= -p$,

$$\therefore a^m \times a^n = a^{-p} \times a^n = \frac{a^n}{a^p} =, \text{(II.)},\ a^{n-p} = a^{m+n}$$

Thirdly, let m and n be both negative, and $= -p$, and $-q$ respectively,

$$\therefore a^m \times a^n = a^{-p} \times a^{-q} = \frac{1}{a^p} \times \frac{1}{a^q} = \text{(I.)}, \frac{1}{a^{p+q}} = a^{-(p+q)} = a^{m+n}.$$

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[*] In resting an investigation on any law, we must, of course, be careful to use that law only to the extent to which it has been already proved. In the above instance, II. is properly referred to, because it is there used only for the case in which the indices are positive integers, and this case had been previously established. It will be found that the preceding remark has been attended to in all the references in this paper.

Hence the first law is established for negative integral indices.

Again, $a^m \div a^n = a^m \times a^{-n} = a^{m-n}$, by what has just been proved. And this is the second law.

In III. let m be positive, but n negative and $= -q$,

$$\therefore (a^m)^n = (a^m)^{-q} = \frac{1}{(a^m)^q} =, \text{(III)}, \frac{1}{a^{mq}} = a^{-mq} = a^{mn}.$$

Secondly, let n be positive, but m negative and $= -p$,

$$\therefore (a^m)^n = (a^{-p})^n = \left(\frac{1}{a^p}\right)^n =, \text{(III. and VI.)} \frac{1}{a^{pn}} = a^{-pn} = a^{mn}.$$

Thirdly, let both m and n be negative, and $= -p$ and $-q$ respectively,

$$\therefore (a^m)^n = (a^{-p})^{-q} = \frac{1}{(a^{-p})^q} = 1 \div \left(\frac{1}{a^p}\right)^q =, \text{(III. and VI.)}, 1 \div \frac{1}{a^{pq}}$$
$$= a^{pq} = a^{mn}.$$

Thus the third law is established for negative integral indices.

In IV. let n be positive, but m negative and $= -p$.

By the sixth law, $\left(\frac{1}{\sqrt[n]{a^p}}\right)^n = \frac{1}{a^p}$, $\therefore \frac{1}{\sqrt[n]{a^p}} = \sqrt[n]{\frac{1}{a^p}}$,

$$\therefore \sqrt[n]{a^m} = \sqrt[n]{a^{-p}} = \sqrt[n]{\frac{1}{a^p}} = \frac{1}{\sqrt[n]{a^p}} =, \text{(IV.)}, \frac{1}{a^{\frac{p}{n}}} = a^{\frac{p}{n}}.$$
$$= a^{\frac{m}{n}}$$

Secondly, let m be positive, but n negative and $= -q$.

Let $x = \sqrt[n]{a^m}$.

In every case this means that $x^n = a^m$

$\therefore x^{-q} = a^m$

$\therefore x \frac{1}{x^{-q}} = \frac{1}{a^m}$

$\therefore x^q = a^{-m}$

$$\therefore x \text{ or } \sqrt[n]{a^m} = \sqrt[q]{a^{-m}} =, \text{(by the first case)}, a^{-\frac{m}{q}} = a^{\frac{m}{n}}.$$

Thirdly, let both m and n be negative, and $= -p$ and $-q$ respectively.

Here as before $x^n = a^m$

$\therefore x^{-q} = a^{-p}$

$\therefore x^q = a^p$

$$\therefore x, \text{ or } \sqrt[n]{a^m} = \sqrt[q]{a^p} = a^{\frac{p}{q}} = a^{\frac{m}{n}}$$

Hence the fourth law is true for negative integral indices.

In V. and VI. let m be negative and $= -p$,

$$\therefore a^m \times b^m = a^{-p} \times b^{-p} = \frac{1}{a^p} \times \frac{1}{b^p} =, \text{(V.)}, \frac{1}{(a\,b)^p} = (a\,b)^{-p} = (a\,b)^m$$

$$\text{And, } \frac{b^m}{a^m} = \frac{b^{-p}}{a^{-p}} = \frac{1}{b^p} \div \frac{1}{a^p} = \frac{a^p}{b^p} =, \text{(VI)}, \left(\frac{a}{b}\right)^p$$

Taking the reciprocals, we have

$$\frac{a^m}{b^m} = 1 \div \left(\frac{a}{b}\right)^p = \left(\frac{a}{b}\right)^{-p} = \left(\frac{a}{b}\right)^m.$$

Hence the six laws are established, when the indices are positive or negative integers and we are now in a condition to complete the investigation, by showing that they are true when one or both of the indices are positive or negative fractions.

Let $m = \frac{p}{q}$, and $n = \frac{r}{s}$, where q and s are supposed to be positive, but p and r may be either positive or negative. (Of course, if m be an integer, q may be taken $= 1$, and if n be an integer, $s = 1$, so that the following investigations include the case in which one of the indices is an integer.)

$$\text{Put } x = a^{\frac{p}{q}}, \text{ and } y = a^{\frac{r}{s}},$$

$$\therefore x^q = a^p, \text{ and } y^s = a^r,$$

$$\therefore (x^q)^s = (a^p)^s, \text{ and } (y^s)^q = (a^r)^q,$$

$$\therefore, \text{ (III.)}, x^{qs} = a^{ps}, \text{ and } y^{qs} = a^{qr},$$

$$\therefore (xy)^{qs} =, \text{ (V.)}, x^{qs} \times y^{qs} = a^{ps} \times a^{qr} = \text{ (I.)}, a^{ps+qr};$$

$$\text{And, } \left(\frac{x}{y}\right)^{qs} =, \text{ (VI.)}, \frac{x^{qs}}{y^{qs}} = \frac{a^{ps}}{a^{qr}} =, \text{ (II.)}, a^{ps-qr}$$

$$\therefore xy = \sqrt[qs]{a^{ps+qr}} = a^{\frac{ps+qr}{qs}} = a^{\frac{p}{q}+\frac{r}{s}}.$$

$$\text{And, } \frac{x}{y} = \sqrt[qs]{a^{ps-qr}} = a^{\frac{ps-qr}{qs}} = a^{\frac{p}{q}-\frac{r}{s}}.$$

Hence, restoring the values of x and y,

$$a^{\frac{p}{q}} \times a^{\frac{r}{s}} = a^{\frac{p}{q}+\frac{r}{s}},$$

$$\text{and } a^{\frac{p}{q}} + a^{\frac{r}{s}} = a^{\frac{p}{q}-\frac{r}{s}},$$

which are the first and second laws.

$$\text{Again, let } x = a^{\frac{p}{q}} \text{ and, } z = x^{\frac{r}{s}},$$

$$\therefore x^q = a^p, \text{ and } z^s = x^r,$$

$$\therefore (x^q)^r = (a^p)^r, \text{ and } (z^s)^q = (x^r)^q,$$

$$\therefore, \text{ (III.)}, x^{qr} = a^{pr}, \text{ and } z^{qs} = x^{qr},$$

$$\therefore z^{qs} = a^{pr},$$

$$\therefore z = a^{\frac{pr}{qs}},$$

$$\text{But } z = x^{\frac{r}{s}} = \left(a^{\frac{p}{q}}\right)^{\frac{r}{s}},$$

$$\therefore \left(a^{\frac{p}{q}}\right)^{\frac{r}{s}} = a^{\frac{pr}{qs}} = a^{\frac{p}{q} \times \frac{r}{s}},$$

which is the third law.

$$\text{Let now } x = a^{\frac{p}{q}}, \text{ and } w = \sqrt[\frac{r}{s}]{x},$$

$$\therefore w^{\frac{r}{s}} = x, \text{ or } w^r = x^s,$$

$$\therefore w = x^{\frac{s}{r}},$$

$$\text{But } w = \sqrt[\frac{r}{s}]{x}, \text{ and } x = a^{\frac{p}{q}},$$

$$\therefore \sqrt[\frac{r}{s}]{a^{\frac{p}{q}}} = \left(a^{\frac{p}{q}}\right)^{\frac{s}{r}} =, \text{(III.)}, a^{\frac{ps}{qr}},$$

which is the fourth law, for $\frac{ps}{qr} = \frac{p}{q} \div \frac{r}{s}$.

Finally, let $x = a^{\frac{p}{q}}$, and $v = b^{\frac{p}{q}}$,

$$\therefore x^q = a^p, \text{and } v^q = b^p,$$

$$\therefore (xv)^q =, \text{(V.)}, x^q \times v^q = a^p \times b^p =, \text{(V.)}, (ab)^p;$$

$$\text{and}, \left(\frac{x}{v}\right)^q =, \text{(VI.)}, \frac{x^q}{v^q} = \frac{a^p}{b^p} =, \text{(VI.)}, \left(\frac{a}{b}\right)^p,$$

$$\therefore xv = (ab)^{\frac{p}{q}},$$

$$\text{and}, \frac{x}{v} = \left(\frac{a}{b}\right)^{\frac{p}{q}};$$

hence, restoring the values of x and v, we have

$$a^{\frac{p}{q}} \times b^{\frac{p}{q}} = (ab)^{\frac{p}{q}}$$

$$\text{and}, a^{\frac{p}{q}} + b^{\frac{p}{q}} = \left(\frac{a}{b}\right)^{\frac{p}{q}};$$

and these are the fifth and sixth laws.

Since p and r may be either positive or negative, the preceding investigation shows that the six laws of indices are true when m and n are positive or negative fractions, and the same has been shown when m and n are positive or negative integers; hence these laws are true universally, and, my task is finished. T. W.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

Ques. 69.—*Proposed by Mr. Salter, Durham.*

A gentleman ordered his cooper to make a vat which should contain 100 gallons of corn; required the circumference of the bottom, the length of the staves being 4 feet.

Answered by I. Sheppard, Gillingham; and Mr. Righton, Ripley.

Let x = the circumference of the bottom in feet,

$$\therefore \frac{x}{2 \times 3{\cdot}1416} = \text{the radius of the bottom},$$

$$\therefore \frac{x^2}{4 \times 3{\cdot}1416} = \text{the area of the bottom},$$

$$\therefore \frac{x^2}{3{\cdot}1416} = \text{the contents of the vat in } c \text{ ft.},$$

$$\therefore \frac{x^2}{3\cdot1416} = \frac{100 \times 277\cdot274}{1728},$$

$$\therefore x = 7\cdot1 \text{ feet, nearly.}$$

QUES. 70.—*Proposed by Mr. Allan, Fordmoss.*

Let A B C D be a square; from A draw a line to the middle of B C; from B to the middle of D C; from C to the middle of A D; and from D to the middle of A B: required the area of the figure formed by the intersections of these lines.

Answered by Tom Tomkins; similarly by F. W. B., Pembroke Dock; and Mr. Stollard.

Let E, F, G, and H be the respective centres of the sides A B, B C, C D, and D A; and let the line D E intersect A F and H C respectively in the points K and L, and B G in the points M and N; then K L N M will be the figure whose area is required.

Because A H is equal and parallel to F C, therefore (E. 33. I) A F is also equal and parallel to H C; and in like manner E D is equal and parallel to B G; therefore K L N M is a parallelogram.

Since the triangles A B F, B C G, &c. are equal to one another (E. 4. I), therefore ∠ C B G = ∠ B A F; and consequently the triangles A B F and B M F are equiangular, and ∠ B M F = ∠ A B F = a right angle. Now as K L N M is a parallelogram, and ∠ M is a right angle, therefore all its angles are right angles.

Because A E = E B, and E K is parallel to B M, therefore A K = K M; and in like manner B M = M N. Moreover the triangles A K E and B M F being equal, B M = A K; but A K = K M and B M = M N, therefore M N = K M; consequently all the sides of the parallelogram K L N M are equal, and it has been shown that all its angles are right angles, therefore it is a square.

Now M N = B M, and K M = ½ A M, therefore the square K N is equal to the triangle A B M. But the triangles A B M, B N C, C L D, and D K A are equal to one another, and also each equal to the square K N, therefore the square K N is equal to one fifth of the whole square A D C B.

QUES. 71.—*Proposed by Mr. O'Clazey, Durham.*

A ball, descending by the force of gravity from the top of a tower, was observed to fall ⅓ of the height in the last second of time. Find the height of the tower and the time of descent.

Answered by Prismoid; Mr. Brookes, Manchester.

$$\text{Here, } S = t^2 \times 16\tfrac{1}{12},$$

and by the question,

$$\tfrac{2}{3} S = (t - 1)^2 \times 16\tfrac{1}{2},$$

$$\therefore \tfrac{2}{3} \times t^2 \times 16\tfrac{1}{12} = (t - 1)^2 \times 16\tfrac{1}{12},$$

$$\therefore t = 3 + \sqrt{6} = 5\cdot44949,$$

$$\therefore S = (5\cdot44949)^2 \times 16\tfrac{1}{12} = 477\cdot625 \text{ feet,}$$

which is the height of the tower as required.

LIST OF MATHEMATICAL ANSWERS.

J. Royds, Rochdale, ans. 69, 70, 71; W. Stephens, Sithney, ans. 69, 70, 71; J. Brookes, Kay Street Academy, Manchester, ans. 69, 70, 71; Prismoid, ans. 69, 70, 71; J. H. Barber, ans. 69; W. Wright, Bradfield Reading, ans. 71; J. R. Stephens, Sithney, ans. 69, 70, 71; A. Allen, Fordmoss, ans. 69, 70, 71; I. Sheppard, Gillingham, ans. 69, 70, 71; Σ, Bradford, ans. 70; F. W. B. Pembroke Dock, ans. 69, 70; J. Stollard, ans. 69, 70, 71; G. Barnacle, Empingham, ans. 69, 70, 71; Emma Royds, Hollingworth, ans. 69, 70, 71; T. Sothern, Burton Wood, ans. 69, 70, 71; F. Clutson, Stowey, ans. 69, 70, 71; J. B. near Sheffield, ans. 69, 70; T. Murtimer, Linton, ans. 69; J. Salter, Durham, ans. 69, 70, 71; G. B. Bush, Yeovil, ans. 69, 70, 71; Nero, Berwick, ans. 69, 70, 71; J. Moffitt, Durham, ans. 69, 70, 71; W. Wakely, Marlbrough, ans. 69; Stainsfield Laddie, ans. 69, 70, 71; H. Ford, Norham, ans. 69; J. O'Clazey, Durham, ans. 69, 70, 71; S. Dyer, Wanstead, ans. 71; T. Wilson, Sebergham, ans. 69, 70, 71; F. R. Crampton, ans. 69, 70, 71; W. Righton, Ripley, ans. 69, 70, 71.

NEW QUESTIONS,

To be answered in our Number for September, 1850.

Ques. 72.—*Proposed by J. H.*

What must be the length of spermaceti candles, seven-eighths of an inch in diameter, that six of them may weigh a pound; the specific gravity of spermaceti being ·943?

Ques. 73.—*Proposed by Tom Tomkins.*

A right cone and cylinder have the same base and perpendicular height; it is required to determine the perpendicular height, when they have the same convex surface, the radius (r) of their bases being given.

Ques. 74.—*Proposed by Nemo.*

There is a tower standing upon a horizontal plane, whose height is 60 feet, towards which a person was observed running at the rate of 5 miles per hour; at what rate is he approaching the top of the tower when he is 160 feet from the foot?

To Correspondents.

S. B.—Your query is too comprehensive, and involves points which do not fall within our province.

Subscriber.—We have tried "Johnston's Dictionary of Geography," and find it very accurate in the points on which we have tested it; they are points too which we have invariably found wrong in previous publications of the same kind.

Subscriber.—We omit the new Examination Statute, because it has been given in most of the papers already.

W. W.—Your question is rather one for a lawyer: we do not feel competent to give an opinion.

T. B.—The list alluded to has not reached us: we hope to be able to give such lists in future.

L. W.—The case proposed being a new one, he had better apply to the Secretary of the Committee of Council.

OBSERVATIONS ON LANGUAGE.

(*Continued from page* 239, *and concluded.*)

LANGUAGE, whether human or divine in its origin, has had a progress, superintended, no doubt, and directed by Providence, as all things are, but still effected by human agency. Nothing is recorded of a change in language anterior to the one which took place at the dispersion of that community, in the midst of which the Tower of Babel reared its presumptuous height towards heaven. The Almighty designed that the earth should be overspread with nations, and not that men should cluster together in a dense multitude around one particular spot; and this design, which the men of Babel sought to thwart, was wrathfully enforced by the introduction of a miraculous confusion into the previously uniform language of mankind. But whether this confusion was only temporary, or is to be understood figuratively, as an interposition which produced merely a discord in the counsels of the chief directors of the commonwealth, there must eventually have happened an emigration to other lands; and then, as new objects and new interests would thus claim human attention, a diversity in language would have naturally resulted. Wars, too, amongst the changes which they occasion, must have effected alterations of dialect; and, in process of time, a variety of agency may have naturally so played the part of revolution as sufficiently to occasion the diversity of languages which our many-tongued world now contains.

It has thus happened that the Gothic, a language of Asiatic origin, has given birth to the German, the Dutch, the Danish, the Swedish, the Icelandic, and the Anglo-Saxon; in all of which there prevails a family likeness. And, in like manner, on the area of territory that formed the principal part of the ancient empire of Rome, we find the Italian, the Spanish, the Portuguese, and the French nations, now speaking modifications of the Latin, variously diversified by the engrafted languages of those tribes that descended from the cold barren regions of the north to seize the rich plunder of the Roman eagle.

Before proceeding to make a few observations on the history of our own language, we may refer to a very striking feature in the history of two other languages—the Hebrew and the Greek. The Hebrew continued to be the language of Abraham's descendants to a period preceding the birth of Christ by about 400 years. It then ceased to be a living language, giving place to the corrupt Aramaic dialect, and also, as a consequence of the extension of Alexander's conquests, admitting to a great extent the supplanting language of Greece, which was generally understood in Palestine in our Saviour's time. Now, why were the Babylonish captivity and the expeditions of the Macedonian prince permitted by Providence thus to silence the living tongue of Israel? Why was the sacred language, in which historians, and poets, and prophets uttered the dictates of Heaven's true and direct inspiration, suffered to pass away from the peculiar people,—so that when Malachi, the last of the Old Testament prophets, sealed up the vision and the prophecy, the Almighty sealed up also the lips of his ancient worshippers, and cut the roots of growth from that tree which had borne the rich fruit of David's heavenly conceptions and of Isaiah's realized futurity? Evidently, as we think, for this reason—that when the walls of partition which had long divided the Israelites from other nations were broken down, and the world obtained free access to the once isolated land, it was better that the Hebrew, in which the sacred books were written, should cease to be a spoken language, than undergo those gradual changes which might have occasioned much misunderstanding of the contents of the inspired volume. A dead language, unlike the dead of the human race, undergoes no corruption; whereas a living language is liable to such alteration, in course of time, that we can draw no distinct line between its ancient literature and its modern, and cannot understand the ancient with sufficient exactness.

In like manner, the Greeks were a people inspired with a love of freedom, and enabled by Providence to maintain for a time their independence, and to form, amidst their progress in civilization, a language fit to be the depository and vehicle of a new revelation of Divine truth; but that language like the Hebrew is dead, and the language of the New Testament like that of the Old is, therefore, in no danger of being corrupted.

Here then is a part displayed of the manifold wisdom of the Creator. Two languages, that have ceased to be living ones, and are thereby settled—secured against corruption, in their idiom and structure, have been chosen for the transmission of Divine truth from generation to generation. The languages have been arrested in their progress, that the stream of Divine truth might have free course, uncorrupted in its mingling with the stream of time. Each language has died, but it is embalmed with sanctity, and it "being dead yet speaketh."

Let us now attend to a few particulars of the history of our own language; let us remount the stream of its descent, and notice the principal affluents that have contributed to make it the mighty and magnificent river which we now behold. We have already said that the Anglo-Saxon is a derivative from the Gothic; and the Anglo-Saxon is the mother tongue of the present English. More than three-fifths of our present stock of words are of Saxon origin, and, in particular, by far the greater number of our monosyllables, or radical terms, are referable to that origin. The Saxons, when they first came over from the opposite shores of Germany, to invade our island, were a barbarous people. The Romans, who had previously been in possession of Britain, but had abandoned it in order to concentrate their strength for the defence of a more vital part of their unwieldy empire, had eventually benefited the rude Britons by the introduction of the institutions and manners of a civilized people. But the Saxons sought not to improve the inhabitants, but to exterminate them; and in this they so far succeeded as to remove from the greatest portion of the island all traces of the original Celtic speech, on which the Romans had impressed but little alteration. The darkness however of Saxon barbarism, which overshadowed the land, was penetrated by a ray of civilized light, when Augustine and his missionary band came to preach the Christian faith to our benighted forefathers. Knowledge then raised her majestic head, and charity appeared with her benignant smile; the cultivation of written language was promoted; and the Saxon phraseology, which had been all devoted to the expression of untutored thought and lascivious passion, began to mould itself into versification that breathed the lofty spirit of Christian morality. The Saxon language, however, was not allowed sufficient duration for much improvement to be effected in its style and structure. The learned among the Saxons, too, wrote more in Latin than in their native tongue; and the great and good Alfred had not long gone down to his grave, after a series of honourable attempts to give literary dignity to his people's language, when the Norman was seen brandishing his sword on the southern shore of England.

The conquest by William brought Norman-French into competition with the Anglo-Saxon. Edward the Confessor had previously evinced a partiality for the language of France, and had promoted some use of it among his subjects; but the tide of the Conquest threatened to make the Norman dialect supplant the Saxon. National antipathy, however, succeeded in a great measure in withstanding the efforts made for the extinction of the mother tongue of England; and the actual result of the conflict was the formation of a diction intermediate to the two, the Saxon tree still keeping its roots in the soil, and the Norman branch being grafted on the native stem. Here, then, to return to the original metaphor, is one tributary found pouring its waters into the main channel of Anglo-Saxon speech. That tributary, however, has had no great amount of permanent influence on our language, except in altering the Saxon inflexions. The Saxon writers gradually declined the use of many of the Norman terms, and thus consigned a great mass of the less pure, though venerable, productions of their predecessors to the dust of neglect, which is now rarely stirred but by the hand of the antiquary.

About the year 1340 flourished Robert de Brunne, the first of our poets whose Saxon comes near enough to the present English to be read with any reasonable facility. Between him and Chaucer the extensive cultivation of Latin literature had the effect of sending into our language a very valuable supply of Latin derivatives; and towards the close of Henry the Seventh's reign, the encouragement given to the study of Greek opened up another fountain, from which tributary waters found their way into the Anglo-Saxon stream. Thus the Latin and Greek formed two additional affluents to swell the tide and to augment its power. And by the time that Elizabeth was seated on the throne the genius of our national grammar began to exercise her guardianship, to fix our spelling and pronunciation, to enstamp with permanence our forms of thought, and to furnish us with a literature which subsequent changes of diction and of style have been insufficient to exclude from the libraries and the understandings of our people.

We have a language, then, which is made up of various but well blended elements. Its main thread is the Anglo-Saxon, and with that have been entwined the Norman-French, the Latin, and the Greek, which, if they have produced a material of motley colour, have produced also a material of great strength and beauty, well fitted to form the pattern of every species of thought. Dr. Johnson has very warrantably said: "From the authors which rose in the time of Elizabeth a speech might be formed adequate to all the purposes of use and elegance. If the language of theology were extracted from Hooker and the translation of the Bible; the terms of natural knowledge from Bacon; the phrases of policy, war, and navigation from Raleigh; the dialect of poetry from Spenser and Sidney; and the diction of common life from Shakspeare; few ideas would be lost to mankind for want of English words in which they might be expressed."

But, while we admit this judgment of Dr. Johnson to have been warrantably formed, it is not to be supposed that, since the glorious Elizabethan era of English literature, little has been done for the improvement of our language. It has been much improved in copiousness, in precision, and in elegance. A progress in science, such as that which has distinguished our country since the period above referred to, must necessarily have carried with it an improvement of the language in which the doctrines of the learned and ingenious sought expression. The stricter inquiries of science have introduced a delicacy of distinctive meanings that almost likens a great proportion of our terms to the imperceptibly united bars of prismatic light. Language, being the utterance of thought, must keep pace with the progress of knowledge, though it cannot outrun it; and the number of words, whether we go back to a human or a Divine source for the commencement of language, must have been at first few, and afterwards progressively augmented, and always commensurate with the degree of knowledge attained by society. And therefore we say, that the point of advancement in knowledge which our age has reached, as compared with that which was arrived at one or two centuries ago, must be expected to mark a point also of higher attainment in the capacity of language. Our modern accessions in this capacity have come chiefly from the Latin and the Greek, the simplicity of our etymological system rendering it very easy to adapt these plastic languages to the tenor of our own. If the English, as they emerged from barbarism, had been left to their own resources, they might have succeeded in so cultivating their vernacular speech as to adapt it eventually to all the purposes for which science has yet demanded expression. But it is by no means unfortunate, that in the polished and copious languages of Greece and Rome there were found by us a literature and philosophy, relieving us, to a great extent, of the trouble of grammatical invention. The practice which we have indulged of extracting from the inexhaustible mines of Greek and Roman learning, the materials for moulding and embellishing our thoughts, has indeed involved some disadvantage, as the facility of such extraction has enabled pedantry to disfigure our language by misplaced and unnecessary ornament; but the main representatives of our national authorship are free from such blemishes—the main tide of improvement repels and refuses to mingle with such gross impurities. We have an established usage, constituted by a host of writers, whose immortal vigour successfully resists the invasions of feeble-minded innovators, and preserves to our republic of letters both a requisite permanency and a legitimate means of progress—both the dignity of attained excellence and the readiness to countenance judicious improvement. When we think, however, how in our generation men have "run to and fro, and knowledge has been increased;" how we have abounded in literary and scientific labourers who have intermeddled with all knowledge; we see, in the present state of our language, a fulness that bespeaks no early necessity of addition to its stores, in order to provide for the expression of what philosophy or art has yet to reveal.

To what we have said may be added, in conclusion, a recommendation of language as a subject of study for the general purpose of mental improvement. The study of the languages of ancient Greece and Rome forms a most valuable discipline for the mind; but on that we will not now expatiate. It is to our own language we would principally refer the reader, as to one in which, whatever be his rank or profession, he ought to be deeply interested, if he desires to fulfil the chief purposes of his existence, both as a member of the community and as an individual; and he will find it a most fruitful means of mental culture and gratification.

Words interpose themselves between our own minds and the thoughts of other men's minds, just as the air is interposed between the eye and the objects of sight. As a clear atmosphere promotes a distinct perception of the things we look upon, so a perspicuous mode of expression enables us to discern properly the intended meaning of a speaker or writer. In *reading*, therefore, we should be sure that we do really see through the words, which are but the medium; that we get beyond them, to apprehend the thing itself, as it were, shining through them. And in *writing*, we should be careful that we use words in their strict, legitimate signification; that they form, as it were, the pure conventional atmosphere, through which men may be expected to see the truth which we wish to communicate. Indistinctness in our conceptions of the words we use ourselves, or find used by others, will act as a mist in the air, obscuring the object which we contemplate, or imposing an inaccurate idea of it on the mind. We ought, then, to make part of our study to consist in a careful examination of the language of some of our best standard writers; not to be content with general impressions of the scope of their meaning, but inquiring occasionally, as a good exercise for the mind, into the propriety and force of particular expressions and particular modes of arrangement in diction. We shall thus examine the structure of those curious implements with which reason works such wonders. We shall compare the means with the end; and shall gradually become acquainted with the variety of instruments with which our language has furnished us, and skilful in selecting those which are best fitted for giving shape to particular conceptions. Accuracy in thought is essentially connected with accuracy of expression. For we think in words as well as utter by them. Our inner temple of imagination is built of language; and according as words are misconceived by us, there is a derangement or a disproportion, or an incompleteness in our mental structure. J. H.

LATIN ETYMOLOGY.

No. III.

In our last paper several words came under discussion which were erroneously supposed to contain a preposition. We will next take in hand one where a preposition has been frequently lost sight of. The verb *irrita-re* is wholly without etymological explanation in Lünemann. Some etymologists refer it to the Greek verbs *ερεθ-ειν*, *ερεθιζ-ειν*, *ερευθ-ειν*, and connect all these verbs with a root signifying red, as though the idea of inflaming were the first meaning. Forcellini gives in part the derivation for which we shall contend, but with hesitation as well as want of completeness. The orthography adopted by Bentley, probably from the MSS., is *inrita-*, so that the word has the appearance of being a compound frequentative verb. The notion of a frequentative is in agreement with the meaning which all assign to the word, that of provoking; and the first problem is to find a simple verb, whence it may be deduced. The middle syllable being long, it is very possible that the letters *ri* have lost a final consonant, for an ultimate root generally ends in a consonant; and that consonant which is most apt to disappear when followed by a *t* is a guttural. Thus the substantive *vīta* was probably once *viv-ita* or *vic-ta*, if we may judge from the related words *viv-ere*, *viotu-*, "food," and the forms *vixi*, *vigere*, &c. The verb *nītor* again seems in its participle *nixus*, and derivative *pernix*, to make claim to an earlier form *nictor*. A still more apposite example is *rītĕ* the adverb, which is but an abbreviation of *rectē*. The omission of a guttural before a *t* is familiar to the modern Italian in every word where the Latin presents to the eye this combination, as in *otto*, *dito*, *fatto*, *latte*, *lattuga*, *petto*, *letto*; as also in the corresponding French, *huit*, *dit*, *fait*, *lait*, *laitue*, *poitrine*, *lit*. Not unlike is the suppression of the guttural aspirate in the pronunciation of our own *fight*, *flight*, *right*, *bought*, *thought*, &c.

Going back to the verb *inrita-*, and the suggested root *rig* or *ric*, we call to mind the habit of the Latin language to strengthen the imperfect tenses, as seen in *pango*, *pingo*, *pungo*, and are so directed to *ringor*, with its derivative *rictus*. Thus *inrito*, making due allowance for the preposition, would signify, "I keep snarling at;" and this is precisely the meaning of the word as used in Lucilius. Inritáta canés quod homó quam plániu', dicit, "what a dog when snarled at pronounces more plainly e'en than man," *i. e.* the letter R. Donatus was only slightly in error when (Andr. III. 4, 18) he remarked: ducitur verbum (inritatus) a canibus qui restrictis dentibus hanc litteram, R, imitantur; and what there is here of error disappears from his note on the Adel. iv. 2, 18, *irritari* proprie canes dicuntur. It is in this very note that the above quoted line of Lucilius has been preserved. Plautus too uses the word in its primitive sense (Capt. iii. 1, 25), Né canêm quidem ínritátam vóluit quísquam imitárier; sáltem si non ádriderent, déntes ut restríngerent. Thus the letter R is the one essential element of *ringi* as well as of *hirri-re*, and probably also of the Greek *ερεθ-ειν*.

The word *inrita-* suggests another, the etymology of which seems to have been misunderstood. *Rixa* has been referred to *ερις*. That these two words may be ultimately connected is highly probable; but that particular derivation has always a claim to preference, which lies within the limits of a language, more especially if it account for the precise form of a word. Now *repulsa*, *noxa*, *impensa*, stand in evident and immediate relation to the verbs *repel-* (*repello*), *noc-* (*noceo*), *impend-*; *sa* being a suffix attached to these verbs, just as a suffix *ta* is attached to the verbs *viv-* "live," *sequ-* "follow" in order to make *vita* and *secta*; and, indeed, we may assume that the two suffixes *sa* and *ta* are but varieties of each other, seeing that the perfect participles and so-called supines of the Latin verb are formed now with a *t*, now with an *s*. As regards meaning, the words *snarling* and *growling* are with us all but equivalents for quarreling; and *jarring* is another example where the roughness of the letter R is similarly turned to account in the formation of language. The same may also be the origin of the Greek *εριδ-*. *Rixa*, we may add, is without etymological remark in Lünemann.

Supplicium is another word which it may be useful to consider, more because the chain of meanings has been misunderstood than from any error in the derivation of its form, though even on this head all is not right in our dictionaries. As *imperium*, *gaudium*, *ŏdium*, are immediately deduced from the verbs *impera-*, *gaude-*, *ŏd-* (of that obsolete imperfect, whence *ōdisse* with the long vowel is a correctly derived perfect); so *supplicium* should perhaps be referred to the verb *supplica-*, rather than at once to the adjective *supplex*. Of course, the verb itself comes from this adjective, precisely as the verbs *vindica-*, *indica-*, *remiga-*, come from the nouns *vindec-*, *indec-*, *remeg-*, (nom. *vindex*, *index*, *remex*). These may appear little matters, but it is far better to attend to them than, like Lünemann, to commit the inconsistency of saying that *vindex* and *judex* are deduced from *vindico* and *judico*, while he himself admits that with *indico* and *remigo* the stream runs the other way, so that they flow from the nouns *index* and *remex*.* *Supplex* itself is, of course, from *sub*, and *plec-*, which is more familiar in the strengthened form *plect-*, and is the origin of the substantive *plica*, whence the secondary verb *plica-re*.

We now come to the more difficult question of the meaning of these little words *sub* and *plec*. The first meaning commonly given in our dictionaries to the preposition is "under," while its original sense of "up" is almost thrown out of sight. Yet its derivatives, *sup-er*, *sup-eri*, *sup-erior*, *sup-remus*, *summus*, with the Greek ὑπατος, a title of Jupiter himself, as well as the ordinary term by which the Roman consul is designated in the Greek historians, all agree in expressing elevation. The idea of "up" is also clearly seen in the compounds

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* Errors of this class are not unfrequent in Greek Lexicons, *γενος* for example being derived from *γενω*, or *γιγνομαι*, and *vice versa*, *μειρομαι* from *μερος*.

subducere, *subvehere*, *sustinere*, *suspendere*, &c. It is true, that when an object has been raised up to another, so that its further upward progress is stopped, it then lies beneath it; and thus a secondary notion of "under" naturally results from the original notion. Our own preposition *up* is indisputably the same word as *sub*, the *b* of the Latin being changed to a tenuis, as in the English words *lip* and *slip* by the side of the Latin *lab-ium* and *lab-i*. Secondly, the meaning of the word *plec* is not so much "a fold" as "a flat surface." The comparative Etymologist would expect to find this word *plec** appearing in German with two aspirates in place of the tenues *p* and *c*, such being the law which subsists between the two languages. Accordingly the word occurs in German, as *flach*, "flat," "level," whence *fläche*, "a flat surface," and *flack*, "a floor." It is thus that the Latin verb *applicare* has for its first meaning that which Lünemann places fourth in his series, viz.: "to place one surface in contact with another," and the familiar phrase *applicare navem terrae*, which he quotes under his second head, would have served for a very apposite example: "to bring a ship *alongside* a quay in order to land." Our own language uses the derivative *apply* in precisely the same sense as in the geometrical phrase: "Apply the triangle A B C to the triangle D E F," or the medical expression of "applying a plaster." In this medical sense, by the way, the Latin word itself is repeatedly used by Pliny. Again in: duplices manus ad sidera tollunt, the epithet *duplices* is not an idle synonym for *duas*, but tells us that the open palms are placed against each other in the attitude of prayer. In agreement with this meaning, *simplex* signifies "one-fold" (or in German "einfach") *i. e.* "consisting of a single surface," the first syllable meaning "one," as in *singuli*, *semel*, *simul*, &c. Indeed, our own term *fold* meant originally not a bend, such as that by which a single flat surface of paper, &c. is doubled so as to constitute two flat surfaces; but is itself merely one "flat surface," being closely related to the noun *field*, or, as the Germans write it, *feld*, which their dictionaries translate "a field," "a plain." Of course the simplest process by which a single sheet of paper can be made into two or more surfaces is by bending, so that the one meaning naturally leads to the other.

With this preface, we now assert that *supplex* obtained its notion of a suppliant from the *open palms* being held *up* towards the superior or offended person. It is not improbable that the first connection between this attitude and the idea of submission or humiliation grew out of the vanquished soldier presenting his hands to his conqueror, that they might by him be bound for greater security, so that the phrase *dare manus* came to signify "surrender."† The hands being opened is an essential element in this process, whereas the closed fist (*pugnus*) is the natural instrument and symbol of fighting (*pugnare*).

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* *Plec* itself is a word of two elements, *pal* and *ec*, the former of which is seen in *pal-am*, *pla-no-*, *pal-ma*, *pal-ud-*, and virtually in *pando*, *pat-eo*, *pat-ina*, *pat-era*, &c. But these ultimate inquiries need not be here pursued.

† And conversely, *vincere* meant to bind before it meant to conquer. The words *vinxi*, *vinctus*, *vinculum*, all point to a verb *vincere* rather than *vincire*.

We go one step further, and contend that the earlier use of *supplex* is seen where it stands as the epithet of *manus*, as in the phrase of Cicero: Tendit ad vos Vestalis *supplices manus.* Of course the attitude of the bent knee is also common, though not always found in the suppliant, and we do not believe it is at all alluded to in the original meaning of the word *supplex.*

Another and perhaps more difficult question is, how the idea of punishment attaches itself it to the word *supplicium.* Lünemann and Grotefend, after Scheller, explain the connection by the act of "kneeling down to be beheaded"—das niederknien um geköpft zu werden—an explanation which would be more acceptable if the word were limited to capital punishments, and if it would at the same time account for the peculiar phrase, *supplicium sumere*—"to inflict punishment." Now this phrase is so similar to that of *poenas sumere,* as at once to suggest a more plausible solution of the difficulty. If *supplicium* denote the *modum supplicandi*—"the means by which a suppliant expresses his contrition," as "an offering to appease wrath," "a propitiatory gift"—the matter becomes clear; and such, we affirm, will be found to be the real meaning of the word. Thus, Varro uses it of the victims slain to appease a god; and here, at any rate, the idea of the bullock bending his head to receive the axe will be wholly out of place. At other times, it seems to denote "gifts, as jewels, money, &c., to appease a human foe." Hence, by an easy process, as *poena* meant originally "a fine" or "compensation," and to receive this was in effect to punish the offender, so *supplicium sumere*—"to take a propitiatory gift"—would have the same signification. Thus, the secondary idea of punishment would attach itself in the same way to *poena* and *supplicium.* This being the case, our dictionaries would perhaps be improved if they substituted, for what they now present to us, something of this kind:

Supplĭc-ium (*supplica-re,* vb.), sb. n., *a propitiatory gift,* whether to the gods (including victims, Varr. R. R. ii. 5), Plaut. Rud. prol. 22; and Epid. v. 2, 59; Liv. xxii. 57; Sal. Cat. 9—or to man, Sal. Jug. 46. 2. Hence, *sumere supplicium de aliquo,* (Cic. pro Rosc. Am. 24; Caes. B. G. i. 31,) literally, *to take a propitiatory gift from any one;* but meaning, *to punish any one.* Compare *sumere poenam de aliquo.* 3. Hence, generally, *punishment*—including even capital punishment—Cic. de Orat. ii. 52; and in Verr. v. 26; Caes. B. G. i. 27, 31; vii. 4, 5, 26, &c.

Aug. 17, 1850. CLAUDIUS.

ON THE CONNECTION BETWEEN PRACTICAL TRAINING AND CATECHETICAL OR OTHER INSTRUCTION IN WORKS OF INDUSTRY.

The publication of another of the Finchley Manuals of Industry—that upon Household Work—induces us to resume the notice of a subject of which we endeavoured to point out the importance in a former number. Our object then was, to show that it is not only practicable, but a positive duty, to introduce into our national and other schools for the poor instruction in works of industry. We propose now to make some observations upon the connection of such instruction with practical training, with the view both of showing its value, when it is all that can be given in the school, and also of offering some suggestions upon the means of occasionally combining practical training with verbal instruction, where the industrial system itself cannot be fully carried out.

Believing that the appearance of these manuals is a very important step towards the proper education of the poor, we are desirous of drawing attention to the advantages which may arise from the use of them, and of doing what we can towards removing the objections or rather obstacles to their adoption, which may be supposed at first sight to suggest themselves to those who may peruse them. We have recently met with a little book, entitled "Lessons on Housewifery," by Mr. White, Hon. Sec. to the Finchley Schools, which was drawn up as a manual of instruction for the use of the girls' school. This seems to have been, as it were, the germ of the Finchley Manuals, now in course of publication. In its preface, the author says:—"It appears desirable that when children are learning to read, at least some portion of their time should be given to words relating to their most important temporal duties, because they will thus be likely to gain both the disposition and the ability to perform these duties well, and because they will otherwise grow up with a distaste for them." He then observes: —"It will readily be admitted, that such reading as is found in this book will not *alone* enable the girl to perform the chief household duties, just as learning the alphabet will not enable her to read; but the "lessons" may prove first steps. The living voice of the teacher should be the chief instrument of instruction; and, whenever it is practicable, girls should, when at school—the only available time—be systematically trained in the performance of household duties, in kitchens, wash-houses, and other offices, in immediate connection with the ordinary school room." Of course, practical systematic training is the best and most effective mode of teaching works of industry; and, however warmly we may recommend the use of the manuals, we do not for a moment suppose that the mere act of learning them, or of teaching a girl out of them, will of itself qualify her to cook, or wash, or properly perform any other household work. But what we confidently assert is, that these books are of great value as first steps, and for turning children's attention at an early period to their most important temporal duties, instead of filling their heads with knowledge, which, however harmless or improving in itself, can be of little practical use; and which, under present circumstance, is more likely to puff up, than either to open or enlarge the minds of poor children, by making them fancy themselves above the station in which God has placed them, because they may happen to have been taught a few facts, which their betters—their masters or mistresses—never heard of. And, it must be remembered, that we are justified in supposing that by the use of these books not only will the knowledge contained in them be communicated to the children, but that knowledge explained and brought down to the level of their capacities by the living voice of the teacher, in subjects, with many of which she is herself practically familiar, so that, without having kitchen or wash-house attached to the school-room, she may nevertheless, by simple reference to what she knows is constantly taking place at the child's home, render much of her industrial teaching thoroughly practical.

Nor are these manuals without value as intellectual and moral exercises. In the "Lessons on Housewifery," now before us, the writer has, to use his own words, "combined the art and science of housewifery with moral considerations. Important principles and simple details of practice are presented in one page. This may lead some to suppose that the subject is above the comprehension of ordinary school girls, and parts may be so. But the endeavour to comprehend will strengthen the mind, and it appears desirable that a school-book on household duties should be such as might be used with advantage in after life. The writer believes that the mingling together in reading moral considerations with practical details is advantageous for children who read but little, and he was unwilling to lose the opportunity of presenting important truths to their notice." To show how happily and effectively this may be done we give the following extract, and we do so the more willingly, because, in the latter part, it carries on the argument to which we are now addressing ourselves:—

"There is in woman's mind an instinctive disposition to make herself agreeable to man, and such is her duty. But young and thoughtless women commonly endeavour to make themselves pleasing to the men by adorning the body with finery, and by dressing the face with smiles. And these arts and wiles of the young and thoughtless do sometimes beget affection in others; but it is the affection of those who are also thoughtless, and poverty and misery are the common results. This instinctive desire to render herself agreeable to man is shown, in the virtuous woman, by an endeavour to learn and perform her particular duties, and the study and doing of these duties will not only enable the young to gain the affection of the intelligent and virtuous of the other sex in youth, but will also enable them to secure that affection throughout the whole of life. That the woman may understand and perform well her household duties, it is necessary that the girl should think about them, and that her hands should be trained to them. In thinking about household duties, a girl may be advised by reading, and by the oral instruction of her mother or schoolmistress; and she should think *why* every particular part of her household duty is performed as well as *how* it is performed; because, knowing *why* as well as *how*, everything done gives satisfaction in labour, that is, makes our labour pleasant. Knowing *why* a thing is done enables us to put right any accidental errors in doing it. It enables us to alter our manner of proceeding under change of circumstances, and to discover new and better modes of proceeding. Above all, the faculty of reasoning, of knowing *why* as well as *how*, is the faculty which God has given us for our guidance in life."

In the preface to the "Finchley Manual on Household Work" there is also the following judicious remark to the same effect:—

> "That boys and girls may become good and useful men and women—sound, virtuous, and valuable members of the community—they must learn to *think*, and to *think* to a *good purpose*. This, in truth, is the great object of education—or, rather, it is education itself—to make people *think* and *act* WISELY."

It is surely undeniable, that the exercise of the mind upon subjects which are to be practically followed up in after life must, in the case of the poor, have an especial tendency to elevate and strengthen it. For, whilst other knowledge may be said to be held, as it were, in abeyance when the possessor of it is engaged in actual labour, industrial knowledge on the contrary will then be in a state of growth and increase. The *why* and the *wherefore* will be daily more and more appreciated; and the mind, having been already trained and habituated to occupy itself with the works in which the hand is engaged, will find pleasure in the exercise, and encouragement also, as it will not fail from time to time to discover simpler and more direct methods of accomplishing them. Add to which, that the short time during which the poor remain at school rarely allows them to make such progress in the other kinds of knowledge, as to render them capable of carrying on the pursuit of it in after life by themselves.

Again, moral and religious instruction, when in childhood connected with instruction in works of industry, is most likely to retain its hold upon the mind, and to grow and increase as life goes on. The girl who has been taught that "housewifery is the business for which woman is specially adapted, and that in housewifery she attains for herself the greatest share of happiness, and diffuses the greatest share of happiness on those around her," will, as she grows up, enter more and more into the truth of this, as she has opportunities of comparing the good housewife with the bad one. She will be encouraged to go on in the good way that has been shown her with increased diligence and cheerfulness, when she perceives (as she will, and as she was taught when a child that she would,) "that the tender cares of smoothing the hair of her child, and preparing the savoury food for her husband, foster all her best affections."

And now we must offer one or two suggestions upon the means of occasionally combining practical training with verbal instruction, where the industrial system can only be partially carried out. And here we would remark, that the introduction of industrial instruction will open a most useful field for the occasional assistance of those ladies who take an interest in the education of poor children, and often devote much of their time to promote it. We would even venture to say, that such instruction will be scarcely less beneficial to the giver than to the receiver. Unhappily, of late years, instruction in household matters has been sadly neglected, particularly in the education of the upper division of the middle classes. The error, like every other, has, to no small extent, affected those immediately beneath them ; and it is to be feared that there is many a wife, in every grade of English society, who is but very imperfectly qualified to superintend the household under her care. And this, again, as we observed in a former number, has encouraged servants to presume upon the ignorance of their superintendants, and to profess themselves competent to do everything; when, in reality, they can do literally nothing as it ought to be done. Now we can scarcely imagine a less humiliating, or rather a more interesting, mode of drawing the attention of young ladies to such matters, than to request them to instruct and question the elder children in our day schools upon the subjects taught in the Finchley Manuals. The act of explaining them (as women only ever explain) to the young and uninitiated will form an admirable preparation for the performance of the duty of superintending domestic servants. It will also afford many opportunities of becoming acquainted with the capabilities of particular children for service, and of occasionally rewarding an attentive and clever child for the progress she may make in school, by allowing her to come now and then to the house of her instructress, that she may there see in practice what at school she has been taught in theory. And, if the child avails herself properly of such opportunities (as a good child will rarely fail to do), it will often lead to obtaining for her a place. This, too, will induce the parents to keep their children longer at school, and thus lessen one of the greatest obstacles to permanent improvement with which the conductors of schools have to contend. And the bigger and older the children are the less difficulty there will be in allowing them occasionally to come to the houses of respectable persons to assist their servants. Thus much practical training may be combined with verbal instruction with little expense or trouble, and without having offices for cooking, and so forth, attached to the school-house. And it is evident, that when the rudiments of useful arts, of cooking, &c., are once thoroughly fixed in the mind, every occasion of seeing others practise them will become available, and assist in forwarding the practical training of the observer. Whereas, without such previous knowledge, in ninety-nine cases out of a hundred, such opportunity would have been allowed to pass unnoticed, or rather would hardly have been available, because the observer was not possessed of sufficient previous knowledge to enable her to turn them to account.

That the foregoing observations are, for the most part, applicable to the education of boys is sufficiently obvious. In their case, however, as we may perhaps endeavour to show on another occasion, practical training may often, without much difficulty, in the country, be combined with oral instruction under the eye of the master. Meanwhile, in order to turn the attention of others to the subject, and to prove that occasional employment in works of industry will not interfere with the boys' progress in other kinds of learning, during the short period that they are allowed to remain at school, we will conclude with an extract, which we have just made, from Mr. T. H. Browne's report on Parochial Union Schools:—

> "Industrial training for boys, ought, I am convinced, to consist mainly in the cultivation of land. Sedentary employments, requiring ingenuity, are scarcely practicable in workhouses. Neither are they so favourable to health, or to moral training, as the cultivation of land can be rendered. The alternation of school and hard work on the same day, work such as will not suffer the thoughts to ramble, and consequently allows the mind to rest,

while the bad feelings of human nature slumber for want of fuel to feed upon, cannot fail to have a very beneficial effect, both morally and intellectually, upon pauper boys. It is remarkable also that boys employed in field-work make greater progress than those who are not so employed, although the latter may give to study nearly twice as much time as the former. Thus, at Belper, where the boys had been regularly employed in field-work for some months before my last visit, I found them not only in an excellent state of discipline, but more advanced and more intelligent than in any school in my district, with the single exception of Kirkdale."

ON THE PERVERSION AND CORRUPTION OF WORDS.

" I WILL account him a god," said an old heathen philosopher, "who can properly divide and define" a sentence which, without impiety, we might thus interpret; that as far as language is concerned, next to our debt for the divine gift itself, comes our obligation to those who prevent its corruption or abuse. The fact of the continual fluctuation of language has been admitted, " Usus verborum vetus interit:" it has been deplored,

" Our sons their father's failing language see ;
And such as Chaucer was, will Dryden be."

Plans have been devised to retard, if not altogether to prevent, this fluctuation. Our own writer, Swift, was at one time deeply interested in the formation of a society* for this purpose —A Language Assurance Society—an association for the prevention of cruelty to words, by which the terms in our language should be protected from the torturing and twisting of barbarous authorship, and by which each word should be required to perform its due and legal service, and not be made a slave of all work, doing duty for half a dozen. But an arbitrary society, calling to account guilty authors and censuring blunders already made, was not likely to answer; and Swift accomplished more by his example than he was ever likely to have done by the precepts of his college.

To fix language absolutely would be " impossible if it were endeavoured, and would be foolish if it were possible." Independently of our necessities, there are always two great agencies at work to prevent any such absolute fixity—one from above, and the other from beneath; the former tending for the most part to improve, accidentally to corrupt; the latter invariably to corrupt national diction. In the present state of society both these causes are marvellously active ; by the influence from beneath, we mean that which is exercised by the imperfectly educated, who, possessing, it may be, real talent, or valuable information on some particular subject-matter, throw without hesitation their thoughts into type, and are successful in gaining the public attention. In such cases, ignorance of the etymology of words leads to an unguarded use of them; neither is this ignorance corrected by any induction made from wide or careful reading of good authors in our own language. At the same time, it may be added, that the want of extensive acquaintance with our best native writers must and does render the diction not only incorrect but limited and poor. The perpetual recurrence of the same term fixes it in the ear and mind of the reader, and it is probably to this poverty that we owe that stiff, wearisome newspaper phraseology from which the better journals of our own time have seen the necessity of escaping. Far back as Shakspeare stands in the history of our language, we may safely affirm that had his diction been diligently studied, and boldly used, our language would have been for all ordinary and practical purposes infinitely richer than it is at present; as it is, by far the greater number of his most expressive words are in suspension—not forgotten, not ignored, but not used. And here we may observe, that, though *à priori* it might have been a question whether the press would have been more active in preserving or destroying the integrity of language, the latter has been actually its effect, there seems to be no probability that the prophecy of Pope, before quoted, will be fulfilled. This is owing to the fact, that the press has *hitherto* been in the hands chiefly of the intelligent and informed; nor should we forget that it has, in the works of our old writers, saved and stored for us an armoury of words only waiting for those who will take the trouble to examine, and who have the power to prove and wield them.

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* Even admitting the practicability of such a plan, we have some reason to think that not a single member of Swift's proposed council was qualified, by etymological knowledge, to do anything more than prevent innovations upon the English language as it then stood. Swift himself had strong prejudices against the use of certain words, and an utter contempt for conventional jargon of all kinds.—See his " Hints for Polite Conversation."

The corruption from above has been of an altogether different character: its effect has been not to pervert language by mere ignorance of words, but by imperfect knowledge of things; less to limit language by the forgetfulness of old words, than to embarrass it by the introduction of new ones, hastily invented and adopted: we say hastily, though we see not how this can be guarded against. New discoveries in science are made, or supposed to be made, to which new terms must be applied. Further discoveries show that the terms thus applied are improper or inadequate. New classifications are rendered necessary; terms already invented now serve to comprehend species or individuals which, in an earlier stage of knowledge, could not have been classed under them. Nor does the mischief by any means end here. Science cannot keep its terms, whether apt or erroneous, to itself: it is continually throwing off words which are absorbed metaphorically or otherwise into common usage. The theory on which they were founded is exploded, and the words remain, if the error existed for any considerable time, to commemorate, if not to perpetuate, what is now discovered to be an absurdity. Sir Thomas Browne has noticed something akin to this, when he says that many errors, with regard to facts, have been continued in existence merely by similes. New discoveries, or supposed discoveries, in science are for a time the pets of the public in the present age; and scientific terms are greedily picked up and used wherever they are conceived to be appropriate.

Other kinds of influence upon language from above might be mentioned; as, where writers of ability (and it is not an uncommon failing) make use of a long, learned word, instead of its more simple equivalent, doing the same thing authoritatively which the vulgar do ridiculously:* and this, in some instances, to show their learning; in others, to improve the modulation of their sentences. It is from above, too, that is, from the well informed, that the introduction of foreign words into our language mainly proceeds. We are far from condemning this practice absolutely. If by such an usage we set forth the idea which we are anxious to express more accurately by a single line, by a single shade, we are surely justified. If our own language really does not supply us with what we want, the sooner the alien is naturalized the better.

If our language is to be a full and perfect exponent of our thoughts, we must not object to the multiplication of words. Let us not hesitate to make it complete from a fear of making it difficult. It is always better to increase the number of our words by direct importation, than to make our ideas indistinct by various usages of the same term; and, as regards trouble, a language which is to be spoken over a large portion of the globe may be worth some trouble in studying. Every justly added word implies an increase of knowledge, or a better division of it. We speak of the difficulties of language; no one ever yet complained that it was too accurate. We refer here, of course, only to words generic or specific; for anything like an attempt at giving a distinct designation to unimportant individuals of a class would be absurd.†

And here it may be observed, that were we to watch the progress of the depravation of words, we should probably find that a needless departure from the original, or strictly etymological, sense had taken place by far the most frequently in those which are of classic derivation; first, because the words of the Celtic and German stocks are *for the most part* expressive of simpler ideas; and, secondly, because the integrity of words of this kind have been under a double guardianship, viz., that both of the learned and the vulgar (and we know how obstinately the latter retain even their provincialisms), whereas the words of classic origin have been continually subject to the loose usage of those who could not correct their conceptions by reference to primary meanings. A third reason may be, the more *forcible introduction* of classic words—a circumstance which will be referred to in an extract we shall make presently.

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* We may observe a further parallelism of those higher and lower influences. Corresponding with the terms introduced from the higher sciences by the educated are the technical words used by the operatives in the arts, as nautical expressions, &c.; and there is a slang of the higher orders, borrowed from the opera, which may not unjustly be compared with that which we might trace to the galleries of third-rate theatres.

† For the following reasons: "It is necessary in the application of names to things that the mind should have distinct conceptions of the things, and retain also the particular name that belongs to every one, with its peculiar appropriation to that conception. But it is beyond the power of human capacity to frame and retain distinct conceptions of all the particular things we meet with; every bird and beast men see, every tree and plant that affects the senses, could not find a place in the most capacious understanding. If it be looked upon as an instance of prodigious memory that some generals have been able to call every soldier in their army by his proper name, we may easily find a reason why men have never attempted to give names to each sheep in their flock, or crow that flies over their heads, &c."—*Universal Grammar, by Sir John Stoddart (reprint from Encyclopædia Metropolitana).*

Hence might be deduced an argument in favour of classical study, as tending not merely to the better understanding of many words in our language, but to the preservation of it from unnecessary changes of sense for the future.

Some writers appear to speak of language as if it were controlled in its transitions by a kind of happy necessity, and as if the mass of a people were guided by an instinct almost providential in the adaptation of their words to their wants, feelings, and conceptions. We do not deny this altogether, but such a notion may unquestionably be carried too far. There is probably not a language in existence in which there are not to be found idioms and usages inconvenient, circumlocutory, inadequate, unaccountable.

Guizot, when defining civilization, thus expresses himself:—" Common sense gives to words their ordinary signification, and common sense is the genius of humanity. The ordinary signification of words is formed by degrees, and has its origin in facts. Whenever a fact is observed which it is possible to express by an already recognised term, it is, if we may so express it, naturally included in that term; the meaning of the word is extended and enlarged, until the different facts, the different ideas which, by their nature, ought to be connected, become gradually united and concentrated under one term." He then proceeds to say that " words of science, being the invention of one or two individuals, are often less true than common words."

Now, with regard to the latter part of this extract, *if* the facts on which the science is grounded are fully ascertained, and the words in the first instance are properly chosen, they cannot rightly be said to be " less true," though they may be more liable to perversion than those which have had a more gradual and general origin; and, as regards the prior statement, we deny altogether that words are necessarily, by vulgar or common usage, allowed to expand, and to receive all the ideas which justly and properly come under them. Let us take, for instance, the word " morality" in our own language; here a precisely opposite process has taken place. The word is a good word, naturally and primarily one of extensive signification, implying the general habits as they depend on disposition and character. It is no uncommon thing to hear a man who is admitted to be envious, proud, malignant, deceitful, ungenerous, passionate, occasionally intemperate, still allowed the credit of being at any rate a moral * man, always provided he abstain from offences of a particular class. Thus, not only is a good word spoilt by a partial application of it, but this canting use of the term at length biasses our judgment. Lord Bacon, in his "Advancement of Learning," says most truly: "Although we think we govern our words, yet certain it is that words, as a Tartar's bow, do shoot back upon the understanding of the wisest, and mightily entangle and pervert the judgment." Thus, our estimates of character are warped from the impartiality of Scripture and of truth.

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* Dr. Johnson, whom no one can charge with a design to undermine principle, like Horne Tooke, by the agency of language, so far from using the word in questien in its cant sense, has, in his own writings, gone perhaps to the other extreme. Of Collins he says, " His *morals* were pure, and his opinions pious; in a long continuance of poverty, and long habits of dissipation, it cannot be expected that any character should be exactly uniform. There is a degree of want by which the freedom of agency is almost destroyed, and long association with fortuitous companions will at last relax the strictness of truth, and abate the fervour of sincerity. . . . . . It may be said that at least he preserved the source of action unpolluted; that his principles were never shaken; that his distinctions of right and wrong were never confounded, and that his faults had nothing of malignity or design, but proceeded from some unexpected pressure or casual temptation."—*Life of Collins.*

If any one is inclined to dispute what we have here said, we will just show him how far this kind of limitation may be carried. "Virtue," at first signifying manliness, then expanded so as to imply all moral excellence, now contracted again, by most of us, in its special application to the female sex, is, as Sir Walter Scott informs us, in some parts of the kingdom quite differently interpreted. "In many parts of Scotland the word *virtue* is limited entirely to *industry;* and a young divine, who preached upon the moral beauties of virtue, was considerably surprised at learning that the whole discourse was supposed to be a panegyric upon a particular damsel who could spin fourteen spindles of yarn in the course of a week."*

We have given one instance of a word unnecessarily robbed of its general and extensive meaning; we will now give another example of a different kind, a compound word, which, when used in its proper and original sense, has puzzled more than one unclassical critic. And here the much-lauded vulgar usage has deprived a term of its important and emphatic signification, and made it nearly useless; we refer to the word "secure." It really means, free from care or anxiety. It has been foolishly allowed to drop from this sense, and we have no other to supply its place. It is now used as a mere equivalent to the word "safe." The following line from the "Perkin Warbeck" of Ford, one of the best of our earliest dramatists, gives the word its full and proper force:—

> "We may be *free from danger,* not *secure.*"
> Act IV. Scene 1.

Shakespeare uses the cognate verb in the same way, in the subjoined passage from "King Lear," Act IV. Scene 1:—

> "Full oft 'tis seen
> Our means *secure* us, whilst our mere defects
> Prove our commodities."

That is to say, our consciousness of ability, by making us careless, leads us into actual danger, and we frequently owe our preservation to faculties on which we had never prided ourselves.† When thus interpreted, it may be paired with the more familiar passage:

> "Our indiscretion sometimes serves us well,
> When our deep plots do pall."
> *Hamlet,* Act V. Scene 2.

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* Lockhart's Life of Scott, vol. i. p. 386. The fact is that every social preference or prejudice, whether local or general, is perpetually striving to divert terms from the service of universal truth, and to make them subserve its private purposes. Thus, such words as "liberal," and "conservative," become terms of reproach; each of them signifying to the vulgar, ignorant, and violent of the opposed party, every thing that is bad and contemptible.

† One of our recent commentators has therefore obliterated instead of explaining

We have thus given an instance of a word of very simple classic origin needlessly deprived of its general significance; of another, a compound, as gratuitously wrested from its true meaning, and both words serving as duplicates, or little better. We will now give a specimen of a third species of depravation, a confusion of metaphor arising probably from the vague idea of the writer as to the true meaning of the word thus misemployed. We observed, in the "Letters from the Baltic," a most eloquent and delightful book, the expression "to cast a *stigma* upon" a person. Now, as the Greek word stigma means a mark or brand, such an employment of the term is certainly an improper one, and the more improper because wholly unnecessary. This is probably the first, or nearly the first, instance of the abuse of this particular word. Our language, we are well aware, abounds with examples of this kind of broken metaphor; "To heap insults on any one," is an instance of it. "To insult upon any one" was the original and more correct expression; but many of these usages could scarcely have been avoided, and to many more we are so habituated that they have ceased to give offence, and the attempt would be superfluous either to expel or avoid them. We may, however, fairly protest against future innovations arising from ignorance, and not justified by the plea of necessity.

ON TEACHING GRAMMAR.

1. "Without language, there is no culture among men." If the child does not properly speak his mother tongue, if he does not thoroughly understand it, his intellectual progress is materially impeded. This is a truth which is universally admitted; and yet this knowledge of language is not so easily acquired as many imagine. How often do we find men who, in their conversation, show neither clearness nor precision; they do not fully comprehend the signification of words, and therefore improperly apply them. And this is more especially manifest when such persons attempt to *write* their thoughts.

Every teacher can bear full testimony to the truth of these remarks. How often does it happen that inattention and even indifference to one's instructions can be traced to the fact, that the pupil either *badly* comprehends, or does not understand *at all*, the language in which he is addressed. A philosopher has said, "We think because we speak;" the cultivation of language is the basis of intellectual cultivation. If the child does not acquire the art of speech, he will remain a stranger to that of thought, which is a distinguishing characteristic of man. It is needless to add that he who does not speak with accuracy and precision, who is not in a condition to correctly make known or enounce

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the sense of the passage, when he says, "We believe that means is here used only in the common sense of resources, powers, capacities. The means such as we possess *are our securities*, and further, our mere defects prove advantages." However otherwise well qualified, no man is fit to take entirely upon himself the task of editing our early English authors, who is not well acquainted with the radical languages.

his thoughts by means of articulate sounds, cannot express or communicate his ideas in writing with clearness and precision.

2. Grammar should have for its object the enabling children *to speak in thinking, and to think in speaking;* or the ability to express themselves, in their own tongue, if not elegantly at least correctly. This, however, is very seldom attempted in schools. Grammar too often consists in *committing to memory definitions and rules, in technical parsing*, &c.; altogether omitting *composition*, or the practical application of these rules, to the every-day life of the child. How often are vulgar expressions and ungrammatical answers allowed to pass uncorrected! *Them* men; *them there* slates; the window is *broke;* that book is *tore*, &c.; are expressions that you daily hear even in schools where grammar holds a prominent position. These vulgarisms are no doubt difficult of eradication, especially as the children are initiated into them from their infancy; yet they may to a considerable extent be corrected by careful and judicious management. Various plans may be adopted to effect this result.

(*a*) The teacher should never allow an answer which violates any rule of grammar to pass unnoticed. The child should be called upon to correct his own language; if he cannot, let another try it: and if no one is able to do it, the teacher must give it himself.

(*b*) Special instruction should be given in vulgarisms and ungrammatical expressions. These should be written on the blackboard, and the children should be required to write them correctly on their slates.

When the children are sufficiently advanced, they should also give the *reasons* for the corrections that have been made.

(*c*) Some teachers appoint the most advanced pupils to take down the faults which their companions commit in speaking, both in the school and in the playground. These are carefully registered, and form excellent exercises for the master in grammar. By this means the master obtains the every-day vocabulary of his pupils.

3. In beginning a course of grammar, the general plan seems to be to enter into a long description of *vowels, consonants, diphthongs*, &c.; then to learn *definitions*, without any previous explanation. The very opposite is the course that nature would point out. *Explanations should always precede definitions;* and when the children have acquired a clear idea of any particular part of speech, the definition of it may then be given, and committed to memory.

4. In commencing grammar, the first thing to be done is to give the children a clear idea of a noun. This may be effected in various ways; but no other step should be taken until this one is thoroughly understood. The explanations are to be given *vivâ voce.*

THE NOUN.

EXPLANATIONS, &c.

1. When we write, or when we speak, we make use of words. We make use of words, then, to convey our thoughts or ideas to each other. The language which we speak contains nine different sorts of words. I am now going to tell you about one of them.

2. Every thing that you can see in the school-room, has a *name.* We call this a *slate*, and that a *book; slate* and *book*, then, are the *names* of these two things or objects.*

Those words which are used as the *names* of things are called *nouns.* The word *noun* means a *name.* It is not the *thing* itself that is called a noun, but the *name* of the thing.†

3. The word *book* is a noun, because it is the name of a thing or an object.

The word *William* is a noun, because it is the name of a person.

The word *Liverpool* is a noun, because it is the name of a place.

The word *dog* is a noun, because it is the name of an animal.

The word *kindness* is a noun, because it is the name of a good action.

4. *A noun is a word which is the name of an animal, a person, a place, or a thing.*

A word which is the name of an animal, a person, a place, or a thing is a noun.

EXERCISES TO BE ANSWERED BY THE CHILDREN.

(*a*) Write down the names of all the things in the school-room.

(*b*) Write names of all things placed on the table at breakfast time.

(*c*) Write the names of all the places you know.

(*d*) Write the names in columns:—1st, of twelve birds; 2nd, of twelve beasts; 3rd, of twelve fishes.

(*e*) Write the names of twelve cities or towns.

(*f*) Write the names of things you can *hear*, but cannot *see.*

(*g*) Write the names of four persons, six rivers, and six mountains.

(*h*) Write the names of the minerals and metals that you know.

(*i*) Write the names of articles that are made of lead.

5. The above exercises are supposed to be put down on the blackboard; the answers are to be written by the children on their slates. Other questions of a similar character should also be proposed. Keep in remembrance the adage, "*Few rules but many applications.*"

6. The children may also be required to select the nouns in some of the sentences which they have read during the day. They will soon do this readily, and will take an interest in it. They should be exercised in this way, until they can with facility tell all the nouns in any sentence of their reading books. As an occasional exercise, they should be made to write all the nouns, in any particular page, on their slates; thus will it become a practical exercise in spelling and writing, as well as in grammar.

7. After having explained the noun, the next point to be taken up is the adjective. First, the *names* of objects; and second, the distinctive *qualities* of these objects. As I may return to this point in a

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* Ask them to give you the names of other objects and things.

† Hold up a *book*, and ask if this is a noun; and do not leave this until you clearly see that they do not confound the *thing* with the *name* of the *thing.*

future number, I shall merely indicate the order in which grammar, in my opinion, ought to be taught to children.

1. The noun. 2. The adjective. 3. The article. 4. The verb. 5. The adverb. 6. The pronoun. 7. The conjunction. 8. The preposition. 9. The interjection. This would constitute the first course. The second course would comprehend a revisal of the first, taking up the following points:—

1. Proper and common nouns; number, gender, case. 2. Adjectives; the degrees of comparison. 3. The verb; its tenses and moods. 4. The adverb more fully. 5. The different kinds of pronouns.

The third course would comprise the principal rules of grammar with properly graduated exercises adapted to each succeeding rule. The common violations of these rules would also come under notice.

W. M^c. L.

GENERAL EXAMINATION OF CANDIDATES FOR CERTIFICATES OF MERIT.

Easter, 1850.

Masters.

SCHOOL MANAGEMENT AND NOTES OF A LESSON.

Section I.—Sketch the ground plan of your school, showing the position of the desks and benches; state the subjects of instruction, the number of hours employed in each during the week, and the method which you adopt in imparting instruction in (α) writing, (β) spelling, (γ) geography, (δ) arithmetic, (ε) grammar.

Section II.—Write the heads of a collective lesson for the lower classes in an elementary school, on the life of—

1. David. 2. Jeroboam. 3. John the Baptist.

Section III.—Write the heads of a collective lesson for the upper classes in an elementary school, on—

1. The operations of agriculture. 2. The nature and use of the horse. 3. The reign of Queen Elizabeth, or William III.

Section IV.—1. How would you employ pupil teachers in instructing the upper and lower classes of your school respectively?

2. How would you arrange for the special instruction, out of school hours, to be given to three pupil teachers, all of different standing, engaged in your school at the same time?

Section V.—Explain how you would treat the following cases:—

1. Unseen, you observe two young boys fighting in the play-ground; they are urged on by the elder lads, and the pupil teacher takes no notice.

2. A boy has been brought to you by his parents as an incorrigible thief, and they have beaten him well.

3. A big boy has been ill-using a little one.

ENGLISH GRAMMAR, AND LITERATURE.

Section I.—1. In what words is the *h* mute or doubtful, Give the best rule for dividing syllables.

2. Classify the elementary sounds of the English language. Compare the flat and sharp mutes.

3. Explain the construction of the following sentences:—

"Philip had no other resource than to send his rival a challenge, to meet him in the open field; which being refused, he was obliged to decamp with his army.

"To his last moments he never forgot the early friendship which he had borne their father;—a strong proof of the good dispositions of the prince.

Section II.—1. Classify the forms of the past tense and participles of verbs.

2. What prefixes are derived from Greek? What affixes from Latin?

3. Give the meaning and derivation of the following words:—Rotherhithe, beadle, vitrify, pertinacious, vulgar, priest, precipice, suicide, sexton, armistice, hydrometer, and technical.

4. Prepare a list of words in natural history or philosophy, derived from Greek, with the exact meaning of each.

Section III.—Write a clear and simple paraphrase of one of the following passages, exactly expressing the sense of each sentence:—

Alas! alas!
Why, all the souls that were, were forfeit once;
And He that might the vantage best have took
Found out the remedy. How would ye be,
If He, which is the top of judgment, should
But judge you as you are? O think on that;
And mercy then will breathe within your lips,
Like man new made.
Merciful heaven!
Thou rather with thy sharp and sulphureous bolt,
Splitt'st the unwedgeable and gnarled oak
Than the soft myrtle:—O but man, proud man!
Drest in a little brief authority;
Most ignorant of what he's most assured,
His glassy essence, like an angry ape,
Plays such fantastic tricks before high heaven,
As make the angels weep.

So oft as I with state of present time
The image of the antique world compare,
Whenas man's age was in his freshest prime,
And the first blossome of faire vertue bare;
Such oddes I finde 'twixt those and these which are,
As that, through long continuance of his course,
Me seemes the world is runne quite out of square
From the first point of his appointed sourse;
And being once amisse growes daily wourse and wourse:
Let none that blame me, if, in discipline
Of vertue and of civill uses lore
I not form them to the common line
Of present dayes, which are corrupted sore;
But to the antique use which was of yore,
When good was only for itself desyred,
And all men sought their owne, and none no more;

When justice was not for most meed outhyred,
But simple truth did rayne, and was of all admyred.

SECTION IV.—1. Give an account of the modifications which the English language underwent between the accession of William I. and Richard II. Name the principal writers of that period.

2. Name the writers of the Elizabethan age, and give an account of the chief works in prose of that epoch.

3. Name the chief works of Milton, Cowper, Burke, and Johnson, and give some account of one of these authors.

SCRIPTURE HISTORY.

SECTION I.—1. Give an account of the miracles of Elijah.

2. Give instances of the justice, mercy, and goodness of God, from the books of Samuel and Kings.

3. Show the fulfilment of prophecy in the taking and destruction of Babylon.

SECTION II.—1. Give instances of sacrifice previous to the Mosaic law. Describe the various offerings prescribed by the law, and explain their typical meaning.

2. Give an account of the life and prophecies of Amos, Micah, and Zechariah.

3. Prove from Holy Scripture that the promises and threatenings of God have conditions annexed to them, whether they be expressed or not.

SECTION III.—1. Give some account of the life and character of St. John the Evangelist.

2. Describe the last journey of St. Paul from Corinth to Jerusalem.

3. Describe the order of events in our Lord's public ministry.

4. Give an account of the transactions at Philippi, Antioch, and Cæsarea, which are recorded in the Acts of the Apostles.

SECTION IV.—1. By what persons was St. Paul chiefly opposed during his ministry? Account for their opposition, and state what were its effects upon the Church.

2. Name the Epistles of St. Paul, according to their date; and give a brief account of the Epistle to the Hebrews.

3. Give instances in which the Epistles of St. Paul, and the Acts of the Apostles, mutually confirm and explain each other.

MUSIC.

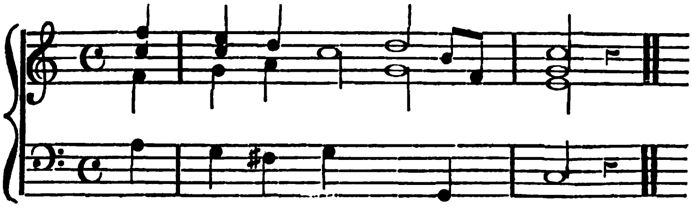
SECTION I.—1. What are the particular purposes for which Music may be employed in a primary School?

2. State what you know of the different methods which have been employed to teach Music in a School.

SECTION II.—1. What terms have been in use to designate the different voices which are employed in choral singing, and what is the character of each?

2. What different clefs have been used to indicate the several voices above referred to? Give an example of each.

3. Write out the following passage in four parts with the proper clef to each.



SECTION III.—1. In the fractions $\frac{3}{2}$, $\frac{6}{8}$, &c., by which the different kinds of time are indicated, what is signified by the numerator and what by the denominator.

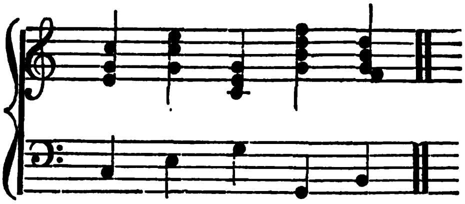
2. Write out from memory passages of music in common, triple, and compound time, putting the proper sign to each.

3. What is the signature proper to the following keys, and what is the relative minor of each?

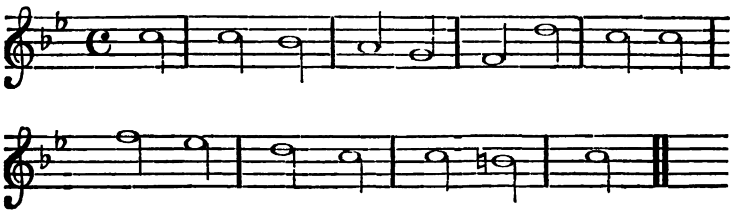
F, E, B, Ab and C♯.

SECTION IV.—1. What is meant by a chord, by its position, and by its inversion?

2. What names would you give to each of the following chords, and how to express them in the figured notation?



3. Write a figured bass to the following passage of Music.



LANGUAGES.

Translate into English:—

Τῷ δ' ἐπιόντι ἔτει, ἐπὶ Ἀρχύτα μὲν ἐφορεύοντος, ἄρχοντος δ' ἐν Ἀθήναις Ἀλεξίου, Λύσανδρος ἀφικόμενος εἰς Ἔφεσον μετεπέμψατο Ἐτεόνικον ἐκ Χίου ξὺν ταῖς ναυσί, καὶ τὰς ἄλλας πάσας ξυνήθροισεν, εἴ πού τις ἦν, καὶ ταύτας τε ἐπεσκεύαζε καὶ ἄλλας ἐν Ἀντάνδρῳ ἐναυπηγεῖτο. ἐλθὼν δὲ παρὰ Κῦρον *χρήματα ᾔτει. ὁ δὲ αὐτῷ εἶπεν ὅτι τὰ μὲν παρὰ βασιλέως ἀνηλωμένα εἴη, καὶ ἔτι πλείω πολλῷ, δεικνύων ὅσα ἕκαστος τῶν ναυάρχων ἔχοι· ὅμως δ' ἔδωκε. λαβὼν δὲ ὁ Λύσανδρος τἀργύριον ἐπὶ τὰς τριήρεις τριηράρχους ἐπέστησε καὶ τοῖς ναύταις τὸν ὀφειλόμενον μισθὸν ἀπέδωκε.—Xen. Hist. Gr.* lib. ii. c. 1.

1. Decline throughout the words *ἔτος, ναῦς, βασιλεύς, τριήρης, ναύτης, πᾶς, οὗτος, αὐτός.*

2. Give the meaning of the enclitics *που, ποι, πω, ποτε, πη, πως.*

State as fully as you can the forces of the prepositions *ἀπό, ἐπί*, and *μετά*, in composition with verbs.

3. Give the 1st pers. sing. of the present and 1 fut. tenses of the words *ἀφικόμενος, ξυνήθροισεν, ἐναυπηγεῖτο, ἐλθών, ᾔτει, ἀνηλωμένα εἴη, λαβών, ἐπέστησε*, and *ἀπέδωκε.*

Why are *μετεπέμψατο* and *ξυνήθροισεν* in the aor. tense, and why are *ἐπεσκεύαζε* and *ἐναυπηγεῖτο* in the imp. tense?

State also the voice of *ἐναυπηγεῖτο*, and the exact force of that voice in this case.

Why are *ἀνηλωμένα εἴη* and *ἔχοι* in the opt. mood?

Translate literally into English:—

Λέγω δὲ, πνεύματι περιπατεῖτε, καὶ ἐπιθυμίαν σαρκὸς οὐ μὴ τελέσητε· ἡ γὰρ σὰρξ ἐπιθυμεῖ κατὰ τοῦ πνεύματος, τὸ δὲ πνεῦμα κατὰ τῆς σαρκός. ταῦτα γὰρ ἀλλήλοις ἀντίκειται, ἵνα μὴ ἃ ἐὰν θέλητε ταῦτα ποιῆτε· εἰ δὲ πνεύματι ἄγεσθε οὐκ ἐστὲ ὑπὸ νόμον.

What is the meaning of *ἵνα μὴ* in classical authors?

ἃ ἐὰν θέλητε. Is this what St. Paul elsewhere calls the *θέλημα σαρκός*?

Translate into English—

Sed memoriâ meâ, ingenti virtute, diversis moribus, fuere viri duo, M. Cato et C. Cæsar: quos, quoniam res *obtulerat*, silentio *præterire* non fuit consilium, quin utriusque naturam et mores, quantum ingenio *possem, aperirem.* Igitur, his genus, ætas, eloquentia prope æqualia fuere: magnitudo animi par, item gloria: sed alia alii. Cæsar beneficiis ac munificentiâ magnus *habebatur;* integritate vitæ Cato. Ille mansuetudine et misericordiâ clarus *factus;* huic severitas dignitatem addiderat. Cæsar *dando* sublevando *ignoscendo,* Cato nihil *largiundo,* gloriam *adeptus est.* In altero miseris perfugium; in altero malis pernicies. Illius facilitas, hujus constantia, laudabatur.—*Sall. Bell. Catilin.*

1. Decline throughout the words *mos, vir, duo, uterque, genus, alius, pernicies.*

Give the derivation of the nouns *virtus, natura, genus, eloquentia, munificentia, integritas, mansuetudo, pernicies.*

2. Give the 1 and 2 pers. of the present tense, the 1 pers. of the perfect tense,—the gerunds, supines, participles, and infinitive mood of the verbs which are in italics in the foregoing passage.

3. Translate into Latin prose:—

a. There were men who thought him too eager for fame.

b. Nobody was so destitute of compassion as not to be deeply affected by the death of Britannicus.

c. The Spartans sent Ambassadors to Athens to accuse Themistocles in his absence.

Translate into English—

Un cheval Anglais, philosophe s'il en *fut* jamais, *sortit* de son pays pour *voir* le monde. Après *avoir* passé par la France et l'Espagne il arriva en Afrique: c'était là que régnait le lion, roi des animaux. L'étranger comme tous ses compatriotes *savait* la politesse, et se *fit* présenter à sa majesté. Il fut introduit par le singe. " Soyez le bien venu," lui dit le monarque; " il me tarde de vous entendre raconter vos voyages. J'ai du loisir; parlez, et ne *craignez* pas de m'ennuyer." Notre voyageur ne se fait pas prier deux fois: c'était un grand parleur; presque tous les voyageurs le sont. " Sire," dit-il, " je *viens* du pays le plus beau et le plus fertile de l'univers. Je trouve ici une grande différence. Premièrement les hommes y sont blancs: ils sont noirs ici. Secondement les rivières y sont quelquefois dures comme le marbre; on les traverse à pied; elles portent" . . . . . " Halte-là," dit le lion; " me prenez vous pour un imbécile en voulant me faire *accroire* des choses impossibles?" Notre voyageur veut s'éclaircir. On ne l'écoute pas, mais on le chasse à coups de cornes de griffes et de dents.

1. What genders are there in French? What is the gender of *fois, voyage, univers, chose, corne, griffe, dent?*

What is the feminine of the adjectives *beau* and *blanc?*

What is the plural of *cheval?*

2. Give the 1 pers. sing. of the pres. and pret. tenses, also give the infinitive mood and participles of the verbs in the above passage which are in italics.

Translate into English:—

Das Schaf musste von allen thieren vieles leiden. Da trat es vor den Zeus und bat sein elend zu mindern. Zeus schien willig, und sprach zu dem schafe: " Ich sehe wohl, mein frommes geschöpf, Ich habe dich allzu wehrlos erschaffen. Ich will hörner auf deine stirne pflanzen, und stärke deinem nacken geben." " Oh nein, gütiger Vater," sagte das Schaf; " Ich könnte leicht so stössig werden als der bock." " Und gleichwohl," sprach Zeus, " musst du selbst schaden können, wenn sich andere dir zu schaden hüten sollen." " Musst' Ich das?" seufzte das Schaf; " Oh so lass' mich, gütiger Vater, wie Ich bin. Denn das vermögen schaden zu können erweckt (fürchte Ich) die lust schaden zu wollen; und es ist besser unrecht leiden als unrecht thun."

1. Decline throughout with the articles the nouns *der vater, die stirn,* and *das schaf.*

2. What is the literal meaning of *gleichwohl* and *unrecht?*

Conjugate the verbs *haben* and *werden.*

3. Translate into German:—
   a. The Germans have become very powerful.
   b. He who has found a virtuous wife has found a treasure of inestimable value.

HIGHER MATHEMATICS.

Section I.—1. Given the first and last terms of an arithmetical series and the sum of the series, it is required to find the common difference.

2. In how many different ways can the three highest places in a class of eight boys be differently filled?

SECTION II.—1. Find all the positive integral value of x and y which satisfy the equation—

$$3x + 5y = 26.$$

2. Show that any number is a multiple of 9 if the sum of its digits be a multiple of 9.

SECTION III.—1. Investigate an expression for the amount of a sum of money (a) at r per cent. compound interest, the interest being payable q times a year.

2. Find the value of $\frac{1-3x+2x^3}{(1-x^2)}$ when $x=1$.

SECTION IV.—1. Solve generally the equation

$$x^3 + ax = b.$$

2. Find the present value of an annuity of £a to commence at the expiration of p years and to continue q years, allowing r per cent. interest.

SECTION V.—1. Prove the following formulæ:—

$$\text{Tan A} = \frac{\text{Sin A}}{\text{Cos A}}$$

$$\text{Sin A} = 2 \text{ Sin } \tfrac{1}{2} \text{ A Cos } \tfrac{1}{2} \text{ A}.$$

$$\text{Cos A} = \frac{1 - \text{Tan}^2 \frac{1}{2} \text{ A}.}{1 + \text{Tan}^2 \frac{1}{2} \text{ A}}$$

$$\text{Tan A} = \tfrac{1}{2} \left\{ \text{Tan} \left(\tfrac{\pi}{4} + \tfrac{1}{2} \text{ A} \right) - \text{Tan} \left(\tfrac{\pi}{4} - \tfrac{1}{2} \text{ A} \right) \right\}$$

2. Show that in any plane triangle—

$$\text{Sin A} = \frac{2}{bc} \sqrt{\text{S } (\text{S}-a) \ (\text{S}-b) \ (\text{S}-c.)}$$

SECTION VI.—1. Find the equation to a parabola and, to the tangent to any point in it.

2. Differentiate $\frac{x+a}{x-b}$ and $\frac{x}{\sqrt{1+x^2}}$, and perform the following integrations—

$$\int \frac{1}{x^3} dx, \ \int \frac{1}{a+x} dx, \ \int \frac{1}{(1+x^2)^{\frac{1}{2}}} dx.$$

PHYSICS.

SECTION I.—1. Explain a method of finding the specific gravity of a solid body and apply it to an example.

2. Describe and explain the Barometer. On what principle is it applied to determine the heights of mountains?

SECTION II.—1. By what experiment would you show the expansion of bodies by heat, and their contraction by cold to the children in your school?

2. Explain the mercurial pendulum and the compensation balance.

SECTION III.—1. How may a permanent magnet be made? What is meant by induced magnetism? Why may iron filings be made to hang to one another in a long string suspended from a magnet?

2. If a bar of very soft iron be held in a vertical position it will be found to be converted into a magnet; its lower end having north, and its upper south polarity. Why is that?

SECTION IV.—1. What is meant by induction in electricity? Explain the principle on which electricity is accumulated in the Leyden Jar, and discharged when the outer and inner coatings are connected.

2. What is meant by Electrolysis? Give examples of it, and of the law observed in respect to it. Describe Faraday's Voltameter.

SECTION V.—1. What is the composition of the atmosphere? How may it be analyzed?

2. In what proportions do Oxygen and Nitrogen unite, and what are the substances formed by their union? What are the properties of Protoxide of Nitrogen? Explain the reaction which takes place when sulphuric acid is poured on nitrate of potash and heat applied.

Notices of Books.

CONVERSATIONS ON HUMAN NATURE: FOR THE YOUNG. BY MRS. CONYNGHAM ELLIS. WITH AN INTRODUCTION BY SAMUEL LORD BISHOP OF OXFORD. 12mo. pp. 114. (*Skeffington and Southwell.*)

THE design of this little book is to assist in grounding the young in a true system of Christian morals, in the system or rather in the principles laid down by Bishop Butler in his sermons. "Those deep and sometimes dark dissertations, which may safely be pronounced the most precious repository of sound ethical principles extant in any language," are in their original form little suited for the young. Yet thoroughly to imbue the minds of the young with the principles established in them, is a matter of great moment, especially in an age like the present, when the pursuit of mere secular knowledge seems to be thought the one thing needful in education. And this is the object of the "Conversations on Human Nature." The form of dialogue affords the best opportunities for explaining difficulties, introducing illustrations, and setting forth arguments in a simpler manner than is possible in an unbroken essay, and of these the authoress has most happily availed herself. To use the words of the Bishop of Oxford, "this work is the fruit of great ability and unsparing labour, animated and directed by the high instincts of a Christian mother's love."

The following observations of the authoress, in her preface, are well deserving of a permanent place in a Journal, of which the professed object is to promote education upon sound and Christian principles; we therefore gladly take this opportunity of introducing them :—

> "It is always desirable that the convictions of the young should be produced with as little aid from abstruse reasoning as possible. Impressions received in faith and simplicity generally take deep root in the heart, as well as in the intellect; and remain enshrined in the sanctuary of the affections.
>
> "To secure such advantages for *truth* is therefore most important; and I think we should find that minds not preoccupied by false notions, would readily receive as true, facts which their consciousness attests, and which they may verify by an appeal to their own experience.
>
> "I hope to anticipate the reception of an erroneous theory on this subject, by introducing the true one, as already established, into the minds of young persons at an age when the ardour of youthful feeling, and even the blindness of early prejudice, may be enlisted on the side of truth; just as I would tell a child the correct theory of the motions of the heavenly bodies as a *fact*, before he was capable of comprehending the process of proof."

The "Conversations" are on "Conscience," "The Love of Ourselves," "The Love of our Neighbour," "Resentment," "Compassion," "Habit," and "The Love of God." Perhaps the best method of giving our readers some notion of the work, will be to add a short portion from the beginning of the first conversation on "Conscience:"—

> "When I went into the study yesterday, mother, you and my father were talking about conscience, and he read aloud a sentence from a little book in his hand, something about "right," and "power," and "authority," but I did not understand it, so I determined to ask you to explain it when we were alone.
>
> "The sentence was from one of Bishop Butler's sermons on human nature. He says, in speaking of conscience, 'Had it strength as it has right, had it power as it has manifest authority, it would absolutely govern the world.'
>
> "Yes, those were the very words, and yet I do not think I understand them.
>
> "If we talk over the subject you will see their meaning and their truth. In a general way, you know what conscience is?
>
> "Oh, yes; it is the feeling in my heart which always tells me when I do right or wrong, even before I know what others think of my conduct; and almost without my own reflection on the act. I mean, that the feeling comes as quickly as if a voice said within me, 'That is right,' or 'That is wrong.'
>
> "This feeling is conscience; it is the voice of God in your heart, telling you what is right or wrong, what He wishes you to do or not to do.
>
> "And does it not always tell me the truth, Mother?
>
> "Yes, always; even when you would rather it told you differently, as you know from your own experience; and it judges as justly of an act in which you *are* interested, as of one in which you are *not* interested. For example; if you had been placed at the head of your class when you knew another boy deserved it, though you would have liked the honour and the good news for home, you would have thought your master wrong,—unjust. In the same instantaneous way you judge of the character of actions in a work of fiction. You find yourself thinking,—'*This* was right,' '*That* was wrong,' as the case may be, without remembering for the moment, that the act you admire or disapprove was never performed, and that, therefore, no one was benefited or injured by it.

"Yes. I *know* I judge without reference to consequences.

"It is your nature to do so; and conscience, this superior faculty in every man, distinguishes between the internal principles of his heart, and judges *them*, as it distinguishes between, and judges, outward acts. It pronounces some actions and some states of mind to be in themselves just, right, good; others to be in themselves evil, wrong, unjust. Without waiting to be consulted, it involuntarily and instantly pronounces judgment, and approves or disapproves *him*, the doer, in whose heart it holds its court. It is by means of this faculty that St. Paul says the 'Gentiles were a law to themselves.' He declares that the 'law was written on their hearts,' that 'their conscience bore witness.' We have a striking instance of this in the narrative of the Apostle's shipwreck on the Island of Melita; for when the barbarians saw the venomous beast hang on his hand, they at once concluded that he 'was a murderer,' whom just judgment pursued to the death; and immediately after, in consequence of his miraculous preservation, they were not only convinced of his innocence, but ready to treat him as a god. This, then, is the 'right' of conscience, of which Bishop Butler speaks.

"But has it not in some way lost its 'power?' for I approve a great many right actions in another, which I have not strength to imitate.

"Yes, I am sure you do. This shows how weak conscience has become; yet it always speaks the truth, for it is quite impossible for you to *do* a *right* action, and *not* to *approve* of it.

"Quite impossible. How then has it lost its power?"

The answer to this question leads to a fresh discussion, for which we must refer our readers to the work itself; and, in doing so, would join most heartily in the Bishop of Oxford's prayer, that "God's blessing may render it an effectual aid in the training of many Christian children."

ARITHMETICAL EXAMINATION CARDS. SERIES I. BY W. J. MANTLE. (London: *Bell.*)

A SERIES of forty-eight cards, each containing five or six questions, with answers on a separate paper; they will be found useful and economical, and will save the master time and labour.

NOVUM TESTAMENTUM GRÆCE. GRIESBACH'S TEXT, WITH THE VARIOUS READINGS OF MILL AND SCHOLZ. 12mo. pp. 600. (London: *Taylor & Walton.*)

A VERY neatly printed edition of the Greek Testament. It contains much that will be found valuable to the theological student. There is a critical and chronological Introduction, an account of the MSS., versions, and editions, tables comprising a harmony of the gospels, an index to the Acts, a chronology of the life and writings of St. Paul; two coloured specimens of ancient MSS., and marginal references, marking by a distinct notation those which are parallels of passages and ideas, and those which furnish a detailed narrative of the same events.

Altogether it is as complete as it can well be made, and is in a convenient size.

PENNY MAPS. PART I. (London: *Chapman & Hall.*)

This is a new series of maps, published in 4to., at a penny per sheet, plain. They are printed from glyphographic plates, and though they want the clearness of steel engravings, they are distinct enough, and so far as we have tried the first part they are accurate; the series will be completed in about 100 maps.

THE ELEMENTS OF ALGEBRA, BY JOHN BONNYCASTLE; WITH MANY USEFUL AND IMPORTANT ADDITIONS, ETC., BY W. GALBRAITH, M. A., EDINBURGH, AND W. RUTHERFORD, LL.D., WOOLWICH. (Edinburgh: *Maclachlan, Stewart, & Co.*)

Bonnycastle's school algebra, though not sufficiently explanatory for private study, is still one of the best treatises for school. The present revised and extended edition furnishes a sufficient guarantee of its excellence in the names of its editors. These gentlemen have rescued Bonnycastle from the disfigurement he has sustained at the hands of some previous editors, and have skilfully and satisfactorily adapted the work to the system of instruction pursued in the universities and military colleges.

A COMPENDIUM OF UNIVERSAL HISTORY: FROM THE CREATION TO THE PRESENT TIME. TRANSLATED FROM THE 24TH EDITION OF THE GERMAN ORIGINAL BY C. T. STAFFORD. (London: *Longmans.*)

This is an admirable specimen of what a compendium should be, and is much more interesting than the generality of *outlines*. It will be found very serviceable, either as a preparatory sketch for the young student, or as a finishing *résumé* for the well-instructed historian.

PENCILLED DRAWING COPY BOOKS. AN IMPROVED PLAN OF TEACHING DRAWING FOR ELEMENTARY SCHOOLS AND HOME TUITION. 12 parts. (London: *David Bogue.*)

An application of the principle which has been for some time applied to the teaching of writing, in Foster's and other copy-books. It consists of a series of twelve books, containing faintly-marked figures, beginning with simple lines, and going on gradually to landscapes; they are printed on stout paper so as to allow of their being used over and over again.

The notion is ingenious, and we think that the plan will be found both instructive and interesting to children.

PAROCHIAL UNION SCHOOLS.

Report of E. C. Tufnell, Esq., one of Her Majesty's Inspectors of Schools, on the Schools of parochial Unions in the Metropolitan District, comprising the counties of Middlesex, Kent, Surrey, Sussex, and parts of Essex, Hertfordshire, Berkshire, and Buckinghamshire, addressed to the Committee of Council on Education.

"My Lords,—During the past year I have been chiefly occupied in my visits to the schools in the Metropolitan District, by examining the qualifications of the schoolmasters and mistresses. This duty has much interfered with the efficient examination of the children, as it is a matter of some difficulty to pass correct judgment on the proficiency of a school when the teacher is absent during the investigation. However, this plan of examining in one day both teacher and taught is in some respects extremely useful, as it gives rise to several important conclusions respecting the management of schools that could hardly originate in any other method. And I believe that, with certain precautions, it is possible to arrive at a tolerably fair opinion respecting the state of the school, in spite of the necessary absence of the master during part of the examination.

"The conclusion which has struck me as most remarkable resulting from this method of investigation is the *marked distinction* that exists between a *clever man* and a *good schoolmaster*. There is no arguing from the knowledge shown by a man on examination to what his school is likely to be. Perhaps this want of connection between the intellectual endowments of a teacher and the proficiency shown by those he teaches may be less apparent in national schools, or in schools where industry is not taught and the children not boarded. But in workhouse schools, where the children from morning to night are under the master's direct influence, it is glaringly manifest. A clever answerer of questions will often have his school in the lowest state of efficiency, while a man who is hardly able to pass the lowest grade on examination will present his pupils capable of answering very fairly in all the common subjects of instruction; and their character, when they get into service, (for this is the surest criterion of the goodness of a school,) will be such as to make them sought after by all who want honest, hard-working, and trustworthy servants. Pauper schools, being invariably boarding-schools, and the master thus having the sole control and supervision of the scholars throughout the whole of the twenty-four hours, his moral qualities have a more powerful influence than in day schools in moulding the manners and dispositions of his pupils. His good humour, his truthfulness, his honesty of purpose, his patience under crosses and insult, his endeavour to do his best in all he undertakes, necessarily make corresponding impressions on the imitative minds of children who are shut out from the world, and are, or ought to be, removed from all evil contagion. These virtues are apart from intellectual attainment, and are, unfortunately, wholly incapable of being displayed by a written examination; and, though I am far from undervaluing literary cultivation, I am perpetually reminded by daily patent fact of its insufficiency when not allied with the more homely virtues, which it is in the power of any one, with God's grace, to practise if he chooses.

"In the absence of district schools, the union schools which to my mind best fulfil the object of their institution are those which are kept quite separate from the adult paupers, in a distinct building, with plenty of garden ground, and placed under the care of an honest, painstaking, married couple. Such an establishment frequently presents the aspect of a well-ordered family; and, though the *intellectual* instruction is often somewhat deficient, habits of industrious application are acquired, and right principles of action inculcated, so that education *in its highest sense* is imparted to the pupils. Children sent forth from such establishments, though sometimes wanting in *technical* knowledge, appear in most respects to fulfil all the objects that the philanthropist might deem desirable, and realize in their future lives the idea of an upright and *Christian-minded* peasantry.

"There is often, in my opinion, much to complain of in the insufficiency of the intellectual education imparted to workhouse girls, and this defect in their training has an extremely injurious effect on their subsequent career. This evil mainly arises from the difficulty of obtaining women adequately qualified to give moral and religious instruction. The few normal institutions that exist for the preparation of female teachers cannot supply a tenth part of the demand, and Boards of Guardians often advertise in vain for applicants to fill vacant schoolmistresses' places. The labour exacted from the occupants of such situations is not particularly hard or disagreeable; a competent salary is offered, besides board and lodging, the latter usually consisting of a comfortably-furnished private room. Considering the exuberant abundance of female workers that is supposed everywhere to exist in England, this difficulty seems extraordinary; and when we call to mind the cries of distress from thousands of oppressed needlewomen that so often assail the public, this state of things seems still more unaccountable. Amongst the numerous widows, the destitute young women, members of families respectably brought up and suddenly turned penniless on the world, whose hard cases of poverty and starvation cause never-ending appeals to the charitable, it seems astonishing that *so few* can be found competent to fill the useful and honourable post of teacher. The candidates for these situations are always required to undergo a certain examination, and it will probably be inferred that the hard and exacting character of this trial is sufficient to account for the indisposition to encounter it. To put to flight this explanation, I will mention what is considered sufficient qualification to pass this ordeal. A knowledge of needlework is of course required, and, as to intellectual accomplishment, the following requisitions will not be thought too difficult nor extensive:—

"They must be able to read fluently.

"To write from memory an abstract of a simple narrative in a neat hand, and without errors.

"To write from dictation sums in the first four simple and compound rules of arithmetic, and to work them correctly.

"To answer correctly, in writing, a few simple questions on the life of our Saviour and his disciples.

"To examine a class on a reading lesson as to the meaning of words and sentences, and as to the remembrance of the matter of the lesson.

"Now the *industrial* qualification required is possessed in as perfect a way as could be wished by nine-tenths of the applicants, but the literary furnishing of their minds is, to speak the truth, wofully deficient. Here, then, is the real source of the difficulty before us; here the generally defective state of female education is seen to tell on their subsequent career; and I suspect that no little of the misery and destitution which such persons have to undergo may be traced in their inefficient early training.

"If the examinations of these mistresses may be taken as a fair test, and I think it may, they would prove that *the education commonly given in the female schools for the middle classes is often worse than that which is imparted in such as are open to the poorer*. I have sometimes had to examine a schoolmistress who has been reduced by misfortunes from a superior station to accept the office, having been brought up in a respectable boarding-school. She will be able to *sing*, to *play the piano*, and speak *a little French*, but will not be able to *spell decently*, will hardly be capable of answering the most elementary *Scripture* question, and be *utterly ignorant* of every arithmetical principle. Among such persons is the choice of schoolmistresses frequently confined, and it is almost needless to detail what must be the result. The children get taught needlework, but nothing else. They are perhaps placed in servants' situations, on first leaving the workhouse, but their ultimate destination is to swell the already overcrowded ranks of needlewomen, and to reduce by competition the wages of this unfortunate class to the lowest livable point.

"I do not believe that there is any truth in the allegations sometimes made that the low prices paid for what is termed slop-work are consequent on the direct competition of the workhouse inmates for this description of employment. I knew only one large pauper establishment near London where needlework was habitually taken in to be performed by contract; this, however, has been some time given up, and at present I am not aware of a single union workhouse, managed under the regulations of the Poor Law Board, where work of this character is performed for sale. In fact, there is no motive to bring the work of the inmates into the general market for labour, as all the available working power is wanted for the necessities of each establishment. The making of the clothes worn by the workhouse occupants is in most cases more than sufficient to keep in employment all the hands capable of being so engaged, and it is a far more common occurrence for ready-made garments to be bought than made for sale in workhouses.

"It will be perceived that we have here a circle of difficulties to contend with. We fail to find good schoolmistresses because the instruction given in girls' schools is usually so inefficient; and the instruction in such schools is inefficient because the schoolmistresses are so. Of course, the institution of normal schools for females would go some way to meet the difficulty; but the number of such establishments, if they are intended to supply mistresses wherever wanted, must be enormous; in fact, they must be more numerous than those for masters, owing to the women so educated often marrying into a superior station in consequence of their superior education, and thus ceasing to discharge the office for which they have been trained. At present there are far fewer normal schools for women than for men, and I am not aware that there are more than half-a-dozen in England. If we are to wait till a sufficient number of such institutions are set on foot, we shall wait for ever; and it is necessary, and I believe possible, to devise a more practicable method for overcoming the evil I have been discussing.

"Were the boys and girls taught in one room by the schoolmaster, and no distinction of sex observed so far as intellectual instruction is concerned, the above difficulty would be easily remedied. I continually hear objections against giving girls the same amount of education as boys, and even the proposal to teach them in geography is frequently treated as too palpably absurd to deserve the trouble of an answer. Among the richer classes the instruction given to the two sexes properly after a certain period diverges into different lines; but with the pauper children, who are only kept in school three hours daily, I maintain that there is no intellectual instruction proper for the boys that is not equally desirable for the other sex. It is not uncommon to meet with respectable persons who seem imbued with the Mahometan idea that it is quite supererogatory to cultivate the faculties of females, or they will only go so far as to concede that they may be taught to read their Bibles, but nothing more. The widest experience proves that it is impossible to make people religious by confining their instruction to religion; and I believe that the impressions of every school inspector will lead to the conclusion that those schools where, due regard being paid to religious teaching, the most varied knowledge is imparted, present the most orderly, moral, and right-minded scholars. The Educational Committee of the [Established] Church of Scotland have often given impressive utterance to this truth in their reports, and reason and common sense would surely prove that to neglect all the intellectual powers, except one, cannot be the most advantageous mode of treating the youthful mind. Yet I believe that *most girls* leave the school with little more than a *very superficial* acquaintance with *religious doctrine.*

"I think it may be plausibly maintained that it is more important to impart intellectual instruction to the female than to the other sex. On the mothers mainly depend the character of the rising generation; and it is a trite remark that many a man who has risen to eminence in the world traces all his success to the early lessons implanted by his mother's care. The dependence of the character of a family on that of the mother is more especially true of the poorer classes, as the father in most cases rarely sees his children from morning to night. This is a truth so well established that it has even been made subservient to mercantile calculation; and I was informed, in a large factory where many children were employed, that the managers, before they engaged a boy, *always inquired into the mother's character*, and if that was satisfactory, they were tolerably certain that her children would conduct themselves correspondently. No attention was paid to the character of the father.

"Of course the industrial instruction of the two sexes must be different; but I am only arguing in favour of the plan of giving a common and simultaneous education to the boys and girls for the three hours daily that they are in school. It will be objected, that a moral contamination may arise from this plan; but in the numerous instances where it has been adopted, and it is becoming much more general in national schools, not only has no evil of this sort accrued, but a superior moral status has been observed as the result. The girls appear to assume a *superior firmness and modesty*, and the boys a *more refined and less boisterous demeanour*.

"But not only individual instances but the example of nations may be urged in support of the propriety of this plan. In Scotland it has long formed a marked feature in most of the parochial schools, and its expediency is maintained on theoretical grounds with all the ardour of extreme conviction. Mr. Stow, the well-known founder of the Glasgow Normal School, to whom Scotland is perhaps more indebted for improvements in her educational system than to any other individual, warmly supports the plan of uniting the two sexes in common schools. In Holland, Germany, and Switzerland, the practice is very general, and so far as my knowledge extends, everywhere on the Continent excepting France. The celebrated Cuvier was sent by the French Government, in 1814, to inquire into the Dutch system of education, and in his report he alludes to the practice in the following words:—'One thing, however, in the Dutch schools rather shocked our habits—the boys and girls are admitted to the same schools. We were constantly assured that no inconvenience had ever been experienced from the practice; and as the custom prevails not only in the schools for the poor, but also in all the burgher schools, where the parents pay tolerably high fees, and are free to make other arrangements for their children, we could not refuse credit to the statement.'

"I am far from proposing that the education in girls' schools should be pushed beyond what may be strictly termed elementary instruction. In fact, it would be impossible with every assistance to impart more than this, considering that the teaching hours are confined to three daily. But I must protest strongly against the plan, now too commonly pursued both in workhouses and other primary schools, of restricting the female scholars to the acquirement of a little Biblical knowledge. I have continually to complain of the small acquaintance with arithmetic that is possessed by the schoolmistresses, and of course their pupils know less. Now, the deficiency in this branch alone will illustrate my position respecting the inconveniences and hardships subsequently entailed on children so brought up. It is a frequent remark in London, that the situation of haberdasher's assistant, apparently so fitted for women, is almost entirely monopolized by men. But the occupants of such situations have to make, in the daily conduct of business, the most rapid calculations of the prices of articles sold, and not one girl in fifty, instructed by an ordinary schoolmistress, would be able to make such calculations with the necessary accuracy and despatch. If she has to reckon the cost of fifteen yards of calico, at 8½d. a yard, she will probably blunder in the computation. This educational defect at once cuts them off from several occupations which would seem well adapted to females, and such employment as needlework, which all can perform, is crowded so as to reduce to almost nothing the wages of those who attempt to get a living by it.

"The injurious effect of such a semi-education, when these girls become wives and mothers, is even more distressing. It would be unreasonable to expect that they could properly perform the duties of their sphere with the absence of all intellectual accomplishment, and the husband and offspring are thus made to feel most acutely the defect I have alluded to.

"The longer experience I have as a school inspector, the more impressed I am with the necessity of exercising extreme caution before pronouncing on the character of the instruction given in any school. Under some circumstances I believe it almost impossible to discover what the children know. An examination before a large and promiscuous assembly appears to me the most inexpedient of all methods of testing what has been taught. The children are required to play their parts in a public spectacle, and I should no more expect them to do so without particular and special preparation than I should expect a drama to be well performed on the stage without previous rehearsal. To put really searching questions to children placed in so novel a position is unfair; and though in a first-rate school much accustomed to be examined by strangers the children may pass such an ordeal with credit, in nine-tenths of schools, what is really known cannot be elicited by such a proceeding. Accordingly, I believe it not an uncommon practice, in public exhibitions of schools, to settle beforehand everything that is to be asked or answered. This plan sometimes leads to *untimely* replies. In one meeting of this description, the master interrupted the boys, while reading the Scriptures, with a question intended to show their ready knowledge of the Bible, thus: 'Now, children, perhaps you will be able to refer to that beautiful passage in'—before he could proceed any further, all the class shouted out the passage required. But mental arithmetic offers the most convenient field for making a favourable impression on a public audience. Children may easily be taught the extended multiplication table, and this alone is sufficient to startle many persons unacquainted with the subject, and who are unaware of the arithmetical tricks by which many apparently very difficult questions are solved by a simple and easy effort of memory. I once threw a teacher into confusion—who was asking such questions as 'What are 18 times 45?' and getting instantaneous answers—by asking how many half-crowns there were in a pound, which proved too difficult for them.

"But even on examining a school with the presence of the master alone, there are numerous allowances to be made, before any defect can be justly charged on his inefficiency or negligence. Every teacher is full of excuses to prove that any observed fault is the effect of unavoidable circumstances nowise chargeable on him; and to test the soundness of these excuses is often a matter of some difficulty. I sometimes visit schools where there have been three changes of masters in a year. It is next to impossible for such a school to undergo a credible examination. It takes a month for a master to become acquainted with his pupils; and no teacher about to leave will exert himself with effect when he is never to see the fruit of his labours or to get credit for them.

"The rapid changes of children oppose almost insurmountable obstacles to the full development of any course of instruction, and dishearten a teacher more than any other single circumstance. Consequently, before passing judgment on the efficiency of the instruction given in any school, it is necessary to inquire how many have left and entered in the course of a year. It frequently happens that the numbers so passing through the establishment exceed the whole number in it.

"Again, if there is any great demand for children's services in the neighbourhood, none of any size are allowed to remain in the school, and the master is left with those only who, under ordinary conditions, would form the third and lower classes in a school. The more advanced or clever youths are quicker taken into service on account of their ability, and hence the very excellence of the master's instruction is the cause of the deteriorated aspect which the school will sometimes present on examination. At times the governor of the workhouse is justly blamed for sending children to perform jobs of work during school hours, and otherwise interfering with the business of the teacher, so as to put serious obstacles in the way of efficient instruction. All these circumstances must be duly investigated and allowed for before the success or failure of any master can be fairly estimated by examining his pupils.

"In my last report I expressed my regret, that the 11th Vict., which contains provisions calculated to remove almost every evil observable in the present system of educating pauper children, had remained a dead letter. I am happy to say that this is no longer the case. The death of two hundred children by cholera, in one establishment, so aroused public feeling that the authorities were enabled to apply the appropriate remedy by establishing district schools, and four have accordingly been founded in the metropolitan division. The first established in order of time is denominated the Central London School District, and comprises the City of London Union, the East London Union, the West London Union, and the Saint Saviour's Union. Twelve persons have been elected, under the orders of the Poor-law Board, by the respective Boards of Guardians of these Unions, to form a managing body, who, after the first eighteen months of service, are to cease to hold office, and thenceforth the term for which the members are to serve is three years. Each member of the Managing Board is required to have a qualification, which consists in being rated within the district upon a net value of not less than forty pounds.

"The duty of this Managing Board is to procure a building suitable for the maintenance and education of the infant poor of each union, who are not above sixteen years of age, who are chargeable to some parish in each union, and who may be orphans or deserted by their parents, or whose parents or surviving parent or guardian may be consenting to the placing of such children in such school. The Board is required to meet not less than once a month, and subject to certain regulations issued by the Poor-law Board, appoints the requisite officers and has full control over the whole concerns of the schools.

"This Board of Management has purchased the premises at Norwood, formerly occupied by Mr. Aubin, the contractor for keeping the London pauper children. The contract system has very properly been discontinued, and now the establishment contains about 800 children, sent by the four above-mentioned unions. This number is 300 less than were in the establishment previously; but the education of the children is conducted pretty much as formerly, and among the boys especially is superior to any other pauper school in this part of the country. The pupil-teacher system still continues in full vigour, and is strikingly successful in preparing youths to become future schoolmasters.

"The second district formed is called the South Metropolitan School District, and consists of the Greenwich Union, St. Olave's Union, and the parishes of St. Mary Magdalen, Bermondsey—St. Giles, Camberwell—and St. Mary, Rotherhithe. No locality has yet been fixed upon for establishing the school to be erected under this order, and it will probably be a considerable time before the object of this order is carried out in full operation.

"The last formed in London is denominated the North Surrey School District, and contains the five Unions of Wandsworth and Clapham, Croydon, Kingston, Lewisham, Richmond and the parish of Chelsea. A large and commodious building for the purposes of this school district is now in process of building near London, and in a few months it will probably be completed and in use. As the whole structure will be carefully arranged in every part for the use of an industrial school, it will present, if wisely managed, the best example in this part of England of what a school for pauper children ought to be.

"The Farnham and Hartley Wintney School District consists solely of the parishes combined in the two unions with the above names, and embraces a thorough agricultural country. One of the workhouses formerly appropriated for the children has been set apart for the use of the children of the entire district; and as it is a tolerably commodious building, capable of extension, and situated on a common, where any amount of land for cultivation may be obtained, I consider that it possesses all the capabilities fitted to form a complete industrial establishment. It has been too short a time in operation to justify an opinion as to its success in fulfilling the purposes of its foundation; but from the spirit displayed by the Managing Board, and the convenient adaptation of the establishment for the object in view, I have little doubt that it will fully answer the end contemplated by its institution.

"The above four schools are all managed by similar regulations, and will educate between three and four thousand pauper children. As I believe that the principle on which they are founded is calculated to avoid almost every inconvenience that arises from the present imperfect system, I consider their establishment as forming an era in pauper education. Those who have closely investigated the subject of pauperism must be aware how greatly it depends on the imperfect training of the youthful recipients of relief. It is unreasonable to expect, even if the conclusions of theory were not confirmed by the lessons of experience, that those who have not been taught to be honest and industrious in youth will ever be self-dependent afterwards, or that they will not avail themselves of every opportunity of living in idleness on the public fund. To well educate the youthful paupers is to take the surest means to check pauperism among adults; and thus I look upon the establishment of such schools as I have been describing as a powerful agent for causing a material diminution in the poor-rates of this country, and spreading civilization and contentment among those who now contribute to swell the dangerous classes of society."

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 72.—*Proposed by J. H.*

What must be the length of spermaceti candles, seven-eighths of an inch in diameter, that six of them may weigh a pound; the specific gravity of spermaceti being ·943?

Answered by Mr. Royds, Mr. O'Clazey; and Mr. Righton.

$$\text{No. cub. in. in each candle} = \tfrac{1}{6} \times \frac{1728 \times 16}{\cdot 943 \times 100} = 4{\cdot}886,$$

$$\text{No. square in. in each end} = (\tfrac{7}{8})^2 \times \cdot 7854 = \cdot 60132,$$

$$\therefore \text{ Length of each candle} = \frac{4{\cdot}886}{\cdot 60132} = 8{\cdot}1263 \text{ inches.}$$

QUES. 73.—*Proposed by Tom Tomkins.*

A right cone and cylinder have the same base and perpendicular height; it is required to determine the perpendicular height, when they have the same convex surface, the radius (r) of their bases being given.

Answered by J. C., J. B. B., Mr. Stollard, Mr. Dyer, Mr. Kettering, Mr. Hill, and Mr. Sothern.

Let x = the perpendicular height,

$$\therefore \text{ the slant height of the cone} = \sqrt{r^2 + x^2}.$$

Now putting c for the circumference of the base, we have

$$\text{Convex surface cylinder} = c\,x,$$

$$\text{and convex surface cone} = \frac{c}{2} \times \sqrt{r^2 + x^2},$$

therefore by the question,

$$c\,x = \frac{c}{2} \times \sqrt{r^2 + x^2},$$

$$\therefore x = \frac{r}{\sqrt{3}}.$$

QUES. 74.—*Proposed by Nemo.*

There is a tower standing upon a horizontal plane, whose height is 60 feet, towards which a person was observed running at the rate of 5 miles per hour; at what rate is he approaching the top of the tower when he is 160 feet from the foot?

Answered by Mr. Moffitt and Mr. Kettering.

Here, distance of the top of the tower $= \sqrt{60^2 + 160^2} = \sqrt{29200}$.

Now it may easily be shown, from the doctrine of limiting ratios, that the velocity on the horizontal plane will be to the velocity of the approach to the tower as the distance of the top of the tower is to the distance of its base:

$$\therefore \text{ velocity of the approach to the top of the tower} = \frac{5 \times 160}{\sqrt{29200}}$$

$$= 4\cdot681 \text{ miles.}$$

Or thus by the Differential Calculus.

By Mr. Allan, Mr. O'Clazey, Mr. Salter, and Theta.

Let x = the distance of the person at any time from the foot of the tower, and y = his distance at the same instant from its top, then the velocities along these lines will be in the ratio of $d\,x$ to $d\,y$; but

$$y = \sqrt{60^2 + x^2}; \therefore d\,y = \frac{x\,d\,x}{\sqrt{x^2 + 3600}};$$

$$\therefore \text{ velocity of approach to the top of the tower} = 5 \times \frac{d\,y}{d\,x}$$

$$= \frac{5\,x}{\sqrt{x^2 + 3600}} = 4\cdot68 \text{ miles.}$$

LIST OF MATHEMATICAL ANSWERS.

J. Salter, Durham, ans. 72, 73, 74; W. Priestly, Earls Heaton, ans. 72, 73; A. Allan, Ford Moss, Northumberland, ans. 72, 73, 74;

Theta, Dewsbury, ans. 72, 73, 74; J. Moffitt, Durham, 72, 73, 74; J. C., Eccleshall, ans. 72, 73; J. B. B., Pembroke Dock, ans. 72, 73; J. Stollard, ans. 72, 73, 74; S. Dyer, Wanstead, ans. 72, 73, 74; W. S., Kettering, ans. 72, 73, 74; H. Hill, Chester, ans. 72, 73; T. Sothern, Burton Wood, ans. 72, 73, 74; J. Royds, Belfield, ans. 72, 73, 74; L. C. ans. 72, 73, 74; Memini, ans. 72, 73, 74; J. Sheppard, ans. 72, 73; W. Stephens, ans. 72, 73, 74; J. O'Clazey, Durham, ans. 72, 73, 74; J. H. Barber, Yorkshire, ans. 72, 73; Nero, Berwick, ans. 72, 73, 74; W. Righton, ans. 72, 73, 74; J. Hewitt, Cambridge, ans. 72, 73, 74; G. B. Bush, Yeovil, ans. 72; T. Wilson, Sebergham, ans. 72, 73; J. Herbert, Woolton, ans. 72, 73; W. Hall, Brandon, ans. 72; J. Brookes, Manchester, ans. 72, 73; R. A. Eyres, Winchester, ans. 72, 73; H. Ford, Norham, ans. 72, 73, 74; J. Minns, Chelsea, ans. 72; T. Frizzell, Hornsea, ans. 74; H. E. T., Penzance, ans. 72, 73; G. Barnacle, Empingham, ans. 72, 73; Plainfield Laddie, ans. 72, 73.

NEW QUESTIONS,

To be answered in our Number for October, 1850.

Ques. 75.—*Proposed by Mr. J. Stanwick, Gilling School.*

What is the greatest area that "Gunter's Chain" can circumscribe.

Ques. 76.—*Proposed by Nemo.*

$$\text{Given } \left\{ \begin{array}{l} \sin.\, \theta = a \sin.\, \phi \\ \tan.\, \theta = b \tan.\, \phi \end{array} \right\} \text{ to find } \theta \text{ and } \phi$$

Ques. 77.—*Proposed by Mr. O'Clazey, Durham.*

A clock upon the surface of the earth beats true time; but when carried to the top of a high mountain, loses 2 minutes every day; required the height of the mountain, the diameter of the earth being 8000 miles.

Intelligence.

The Rev. J. Hunter, M.A., formerly Vice-Principal of the National Society's Training College, Battersea, has been appointed Principal, in the room of the Rev. T. Jackson, D.D., Bishop Designate of Lyttleton, Canterbury Settlement, New Zealand.

The Church of England Schoolmasters' and Schoolmistresses' Mutual Assurance Society.—A public meeting was recently held at Exeter Hall for the purpose of explaining the objects and progress of the above society. The Lord Bishop of Lichfield presided on the occasion, and was supported by the Lord Bishop of St. Asaph, the Reverends Richard Burgess, John Hodgson, Charlton Lane, John G. Lonsdale, William Short, &c., &c. His Lordship, the Chairman, observed, that they were met together to promote the interests of a society which had been formed under the auspices of the Archbishops of Canterbury and York, and which had for its object to afford to Schoolmasters, Schoolmistresses, Sunday-school Teachers, and Scripture Readers, an opportunity of making Assurances suitable to their peculiar circumstances, and of uniting themselves mere closely together by a new bond. It was unnecessary for him to say anything in support of the unspeakable value of such a society, or of the office and labours of those for whose advantage it was established. There were no subjects about which men were so much agreed as of providence during the time of health and strength, and the necessity of instituting and supporting such Associations.—The Report read by the Secretary gave a cheering account of the proceedings of the society, and the following list of donations was announced:—The Archbishop of Canterbury, 10*l.*; the Bishop of London, 10*l.*; the Bishop of Winchester, 10*l.*; the Bishop of Lichfield, 10*l.*; the Bishop of St. Asaph, 10*l.*; the Bishop of Ripon, 5*l.*; the Bishop of Sodor and Man, 5*l.*; the Lord Bayning, 5*l.*; the Rev. R. Burgess, 2*l.*; the Rev. Derwent Coleridge, 5*l.*; the Rev. J. Hodgson, 5*l.*; the Rev. J. G. Hodgson, 5*l.*; the Rev. Thomas Jackson, 5*l.*; the Rev. John Gylby Lonsdale, 5*l.*; the Rev. W. Short, 5*l.*; the Dean of St. Asaph, 2*l.*; the Rev. Charlton Lane, 2*l.*; Joshua J. Allen, Esq., 2*l.*; John Martin, Esq., 2*l.*—The donations, however, already received fall far short of the sum necessary to defray *first expenses;* and while it appears desirable as much as possible to avoid any unnecessary appeal for eleemosynary aid, the Directors most anxiously call upon those kind friends, who have it in their power, to assist them in this respect in the present infant state of the society. It is to be hoped, that this aid will most cheerfully be given, when the objects of this important society are fully understood, and that those for whom it was formed will avail themselves of its benefits.

CONDITION OF FEMALE SCHOOLS IN THE SARDINIAN STATES.—The Educational reports give the following accounts:—That the female schools have not attained that perfection of which they are susceptible. That there were only 726 girls' schools in Sardinia Proper, Calculating each school at 100, this gives only 72,600 girls under instruction. This is a very small number, when we find that the whole population exceeds 4 millions of people. The number of girls between 5 years and 10 years of age is calculated at 367,399; this leaves, therefore, 294,799 girls who are capable of profiting by elementary education, and yet do not participate in any of its benefits. Two proposals are recommended to remedy this evil. 1st. That the primary instruction of girls be ordained by law. And should the communes or parishes be too poor to establish schools for both sexes, that the instruction should be *gratuitous* only to those who were unable to pay. 2nd. That Normal Schools for schoolmistresses be established. The success attending one founded at Turin, by the Count Franchi, is adduced as an evidence of the good to be effected by such institutions. But from the want of space and means this school was cramped in its operations; Government, therefore, is called upon to render it assistance, as it is an establishment having for its object the education of those who have a powerful influence on the country. So long, says the report, as the mothers remain uneducated, we shall have an ignorant population; and, with ignorance, we shall have passions fiery and unsubdued; and the field will be open to demagogues of every description. A mother, who knows how to read and write, can always find time to teach these to her children; but the father, engaged in his daily toils, cannot do so. If we educate the *women*, in a few years we shall have educated the *country*.

THE GRAMMAR AND COMMERCIAL SCHOOLS, LOUGHBOROUGH.—On Friday, Aug. 9th, the foundation stone of a new school was laid at this place; the Lord Bishop of Peterborough, a native of the town, officiating in the ceremony. By deed, dated 1491, Thomas Burton bequeathed land in and around Loughborough, for the maintenance of a chantry in the parochial church. In the year 1597, it was decreed that the funds should be applied to the endowment of a Grammar School, the repair of public bridges, and in aid of parochial rates. Up to a recent period, however, the annual income, which amounted to 1400*l*., has been appropriated to the maintenance of four schools—a grammar school, a high school, a low school, and a girls' school—affording education to nearly 400 children. The grammar school, apparently from the trifling sum which was appropriated to its expenses, has of late years been discontinued. By a decree of the Court of Chancery, in 1849, it was provided, that no part of the revenue should be available for parish burdens, but that the whole of the princely income, now amounting to 1760*l*. annually, should be applied to educational purposes. Provision was made in the decree for the erection and maintenance of a grammar school, wherein Latin, Greek, and French are to be taught. In the same building a Commercial School will be conducted, answering to the present high school, and the room now occupied by the scholars of the latter will be fitted to afford additional accommodation for that department.

JUVENILE CRIME.—The Lord Chancellor has the power of assigning the persons of all children convicted of felony to the custody of any persons who are willing to take charge of them; and, at the suggestion of Mr. Rushton, the Town Council of Liverpool is about to invoke that authority in favour of juvenile offenders, in order to their lodgment in a reformatory school. An excellent plan. Still, the qualification for admission to the Reformatory will be the commission of some crime; there is nothing to protect children from the misteaching of parents. It is evident, that the State does not provide any sufficient protection for that helpless class, not only against misteaching, but also against more direct outrages. How continually do we read of children made the instruments of parental depravity, or the victims of parental ferocity; sometimes murdered for burial-fees, sometimes scourged in a savage exaggeration of Solomon's precept, " Spare the rod and spoil the child." The case of the Birds, who killed their apprentice with brutal misusage, is followed by that of Bubb, who starves her little niece to death; and these cases are peculiar rather in their flagrant excess than in their nature. Indeed, a certain degree of ferocity towards the young seems to be licensed by the usage of ignorant society. While a wiser spirit gains ground among those who are better informed, the ill-taught hold themselves free to terrify, beat, and coerce the tender in years, as a matter of course. A correspondent in the *Morning Chronicle* reports, how he saw a keeper savagely cane a little boy for flying a kite in Bushy Park; and instances of more domestic severity often come forth. Now, any one who looks back to the years of childhood, will remember how vivid are the impressions of that period—how terrible the aspect of violence—how desolate the sense that help is not at hand—how agonising the forlornness. Represent that to your mind: think of the thousands and thousands of children whose existence is one of hunted despair; think of the "hell upon earth" to which those little innocents are born; and ask yourself if society is not to blame in neglecting to provide some refuge for these poor victims? Yet, after all, though there might be a great improvement in this behalf, the most summary authority vested in magistrates and police would not suffice to protect childhood against parental tyranny or misteaching, unless that authority were endowed with an ultra-inquisitorial power of domiciliary visitation; the only effective protection would be, to make the parent a policeman over himself by teaching the parent. Half of our criminals are created by bad training at home; and the trouble of reforming them is occasioned by the neglect to form the parent, educationally. The other half consists of those whose physical organization is bad; the bad organization often resulting from depraved life under a continued *inheritance* of misteaching. Thus we continually trace the criminal population that vexes society, crowds our goals, and puzzles our magistrates, to some neglect of education in the parental direction.—*Spectator.*

INSTRUCTION IN NATURAL SCIENCE IN RUGBY SCHOOL.—The following important announcement has been issued:—"Physical Science having recently been recognised by the Universities of Oxford and Cambridge, as an important branch of education, and the new arrangements there having made it competent for students to obtain academical honours in that department, it has been thought well to provide efficient instruction in this branch of study for those pupils of Rugby School whose parents desire them to gain some elementary knowledge of the subject. W. Sharp, Esq. F.R.S. Fellow of the Geological Society, &c., Reader in Natural Philosophy to the School, has kindly undertaken, at my request, to give a course of Lectures during the half-year now commencing, of which the following is a syllabus.

"EDWARD MEYRICK GOULBURN,
Head Master.

"School-house, August, 1850.

"HEAT.

"Sources of Heat.—The Sun, its annual amount, &c., Mechanical, Chemical, and Electrical action, &c.

"Transference of Heat.—By Conduction, the varying conductive powers of different substances.—Convextion, the carrying of heat by liquids.—Radiation, refraction, reflection, &c., of Heat.

"Effects of Heat.—Expansion and Contraction, Thermometers, &c.—Liquification, Evaporation, Ebullition, &c.

"Specific and Latent Heat.—Quantities of Heat required to raise the temperature of different substances an equal number of degrees.—Heat absorbed by the liquification and vaporisation of different bodies.

"Action of Heat on Chemical Affinity.—In promoting, preventing, and overcoming Chemical Affinity.—Properties of Flame, Combustion, &c.

"Action of Heat on the Earth's Surface.—Some account of the phenomena occurring in the Atmosphere, the Sea, and on Land, caused by Heat.

"Application of Heat to the Arts.—Uses of Frigorific Mixtures—of Boiling and Distillation—of Steam—of Combustion, &c.

"The Lectures will be illustrated with the necessary Instruments, Apparatus, and Diagrams, and with a great number of Experiments. There will be an examination at the end of the half-year."

To Correspondents.

W. R.—We hope to give the School Report in our next number.

W. T.—We think the second method you give is the right one, and it may be sufficiently explained to a class without changing the numbers into money; the communication is hardly of interest enough to print.

T. M.—We do not think there is any such book.

W. B.—We regret that we cannot insert the address you have sent us.

A. M.—We are sorry we cannot undertake to do what you ask. Ritchie's book on that subject will, we think, answer your purpose.

ON SCHOOL INSTRUCTION IN THE CULTIVATION OF THE GROUND.

THE saying of the son of Sirach, " Whatsoever thou takest in hand, remember the end, and thou shalt never do amiss," may be very usefully and safely applied to the business of education. For what is its end? It is to fit and prepare the young for the stations which they are to fill in life, teaching them at the same time to remember always that great account which they are one day to give before the tribunal of their Judge. Hence, the first conclusion to which this saying leads, is, the absolute necessity of making religion the primary object of education. Now religion implies the performance of duty not only to God, but also to man. But to perform our duty to man, we must be qualified to discharge our social duties as intelligent and responsible beings. We are not to go through our parts as mere machines, but as those who have a personal concern in what they do, whether acting for themselves or for others. And, in what men do for themselves or upon their own account, they generally take interest sufficient to induce them to apply their minds to their work, and to set their hearts upon it, so that the mind and the will go along with the hand, and contribute their share towards accomplishing the task. Thus labour is lightened, and the mind gains wholesome exercise. But when men are not acting for themselves, but as the mere servants of others—especially in such occupations as those of the common field labourer,—the head and the heart seem to take but little part in the operations of the hand; and thus the moral and intellectual powers too often become deadened, or well-nigh brutalized, by inactivity. Now, in order to prevent evils of this description, it must evidently be of considerable advantage to inform and exercise the minds of the young in those matters, about which the hands will in after years be employed. And this seems especially to apply to the education of that large portion of the poor, whose support in life is to be derived from the cultivation of the ground. The labourer in the field is surrounded by objects full of interest and instruction to one taught betimes to look upon them with an observant and religious eye. These are, indeed, to use the beautiful language of Cowper,

" His to enjoy
With a propriety that none can feel,
But who, with filial confidence inspired,
Can lift to heaven an unpresumptuous eye,
And smiling say,—' My Father made them all!'
Are they not His by a peculiar right,
And by an emphasis of interest His,
Whose eye they fill with tears of holy joy,
Whose heart with praise, and whose exalted mind
With worthy thoughts of that unwearied love,
That planned, and built, and still upholds, a world
So clothed with beauty for rebellious man?"

And the minds of the young are singularly open to such impressions from the works of nature; and, if by the aid of wise and pious teachers their minds have received a proper moral and religious direction, they will readily learn at a very early period not only to look with delight on the works of creation, but also to look through them up to God Himself. This is universally allowed, though in practice it has hardly been sufficiently acted upon; and not a little still remains to be done towards providing simple and instructive works to assist the teacher in this part of his labours.

If the subject be regarded only in a moral and intellectual point of view, it is evident that many advantages would result to the young in our rural districts from drawing their attention to works of husbandry, and exercising their minds while at school upon objects with which they are continually to be brought in contact in after life.

The pursuits of the husbandman are far from being in themselves of a dull or monotonous character. The differences of soil, the varieties of seeds, the variations of the seasons, require different modes of treatment, and not unfrequently great promptness and watchfulness to meet sudden and unforeseen changes. No two seasons, either of seed-time or harvest, are exactly alike. In many districts scarcely two fields are exactly similar in soil, and the soil of the same field sometimes assumes a new character in consequence of a peculiar season or a fresh mode of cultivation. The changes and successions of different crops, and the different acts of cultivation which they require, are all calculated to excite interest, and to call the faculties of the mind into action. Still, all these points of interest, and these subjects for observation and thought, may be, and often are, suffered to pass unnoticed. The bodily eye of the untaught labourer sees, but does not perceive; because the eye of the mind is closed. It is closed, but it has not been put out; it is there, though asleep, and needs only to be opened by the friendly hand of education.

Of all the gifts which God has bestowed upon man, the faculty of observation (with which the periods of childhood and youth are peculiarly gifted,) derives most benefit from guidance and direction. And the powers of observation are very easily awakened and directed in the case of the young. For their minds are unoccupied, and have not yet become benumbed and deadened by inactivity. Now, to prove the advantage of awakening and directing this power of the mind, it may suffice to remember that observation, when it relates to anything which immediately concerns ourselves, and of which we are conscious, may be called experience—that best of instructors. Hence, to teach a child to observe, is to place him under a course of instruction, the most valuable and effective. For all knowledge derived from observation is knowledge gotten at first hand, and which may be gained all day long, and at any moment of life. It is, too, scarcely possible for a thinking person to observe without making some reflection, however short or secret, on what he observes. Hence, to awaken observation, and to direct it to objects which are in after life to be continually before the eyes, and about which the hands are to be daily employed, is like opening a mine of information, into which, when the labourer has once been fairly introduced, he may be left to dig and delve for himself. And this, we contend, is what may be done for the children of our agricultural labourers, by turning their attention, whilst at school, to what is going on in the fields, and by giving them such useful elements of knowledge as they may be able to apply to what they will see and do when they go out to work. And there are many opportunities for combining with such school instruction in husbandry much that may be considered almost equivalent to practical training. As, for example, in going to and from school, the country boy will have numberless opportunities of seeing in the fields the operations of husbandry, about which his teacher has been instructing him; and nothing can be more easy than for the teacher to shape his instruction according to the circumstances and opportunities of his scholars: and it is obvious that the boy will view the labours going on in the fields with very different eyes, when his attention has previously been directed to them, and his mind informed upon them.

A natural opening for instruction in works of husbandry is to be found in gardening. Hence, with an especial view to the improvement of the agricultural labourer, and to the introduction into our schools of industrial instruction in this department of labour, one of the Finchley "Manuals of Industry" has been devoted to the subject of gardening. "Gardening," as is observed in the preface to that Manual, "performs on a small scale what agriculture or farming performs on a large one. Agriculture is only an extended system of gardening." This is, indeed, strictly true; and we may observe, by the way, that all recent experiments seem to prove that the more nearly agriculture can be brought to resemble gardening, the more profitable and beneficial will it become, both to the farmer and the labourer. And in the above-named Manual there are some interesting observations upon this, under the head of "Spade Husbandry." The smallness of the scale upon which gardening may be carried on, not only renders it attractive to the young, but also places a certain amount of practical training within the reach of almost every country schoolmaster. The planning and forethought required for the management of a farm, are well exemplified in the laying out and cropping even of a cottage garden. And so also the details of agriculture are well illustrated by the details of gardening—as in moving the ground, draining, sowing, weeding, and so forth.

It is perhaps to be regretted that the "Manual upon Gardening" has not been arranged on a less scientific plan, and with a more especial regard to its speedy and general adoption in schools. For instance, the lessons with which it begins, upon the nature and properties of soils, with the means of their improvement; upon manures, their properties, and modes of management; and the technical terms, taken from botany, chemistry, and geology, which are introduced into this part of the Manual, are likely to discourage many teachers, and to lead others into an unpractical or pedantic mode of teaching, uninteresting to the scholar, and unsuited to his position in society. This is, in fact, the great objection which we have to the present tendency to give so much instruction upon such subjects as geography and history in our schools for the poor. Not that we object to the minds of poor children being exercised and enlarged; but we dread their being puffed up with the notion that they know more than their masters and superiors. Now, hard words, and a smattering of knowledge about "primitive earths," and "potash," and so forth, may lead a young person to fancy himself very knowing, when in reality he is totally devoid of practical knowledge, and perhaps in no slight degree incapacitated from obtaining it by the conceit which such book-learning may engender. We could wish, therefore, that the present arrangement of subjects in the Manual had not been adopted, and that the subjects placed first had been reserved for the conclusion of the Manual; or that some intimation had been given in the Preface, to the effect that it might be advisable not to begin instruction upon gardening with these subjects.

We should have been disposed to place first, the part which treats of the size and form of a cottage garden. This would at once introduce the black board—that most useful instrument of instruction in the hand of a skilful teacher. The plan of the proposed garden drawn upon the board, the proportions of it to be allotted to different sorts of produce, the succession of employments in it, would be thus brought before children with a reality and plainness which could not fail of gaining their attention, and set them upon thinking of what they had seen in their parents' gardens at home, which answered to what their teacher was telling them. Then the calculations, as to measurement and so forth, would bring in their arithmetical knowledge, and give that a practical bearing upon their future occupations in life. Take, for instance, the questions and answers upon this subject at p. 33 ;—

Q. What is the size or extent of the garden you assist in cultivating ?

A. About half a rood, or twenty poles.

Q. How many square yards do you reckon to a pole ?

A. Thirty and a quarter.

Q. How many poles make a rood ?

A. Forty.

Q. As your garden contains twenty poles, how many square yards does it contain ? and what proportion of an acre is it equal to ?

A. It contains 605 square yards ; and it is equal to one-eighth of an acre.

Q. For how many individuals will such a piece of ground produce a sufficient quantity of vegetables ?

A. It should produce a sufficient quantity for a man and his wife and three or four children.

Q. What is the form of your garden ?

A. A long square.

Q. What are its length and breadth ?

A. It is thirty-eight yards, or 114 feet, in length ; and sixteen yards, or forty-eight feet, in breadth.

Q. Supposing it not to be at present under cultivation, how would you lay it out, and plant it, with a view to its being most usefully productive.

A. In the first instance, I would mark off nineteen yards, or fifty-seven feet, in length, at one end, for potatoes.

Q. Well ; when, and in what manner, should that portion be prepared for planting ?

A. It should either be dug or trenched in the autumn, or in winter.

Q. Till what time in the spring should it lie fallow ?

A. Till April.

Q. What would be your next step ?

A. I would mark off seven yards, or twenty-one feet, in length, for cabbage, which should be dug and planted in rows as soon after Michaelmas as possible.

Q. Having gathered and consumed some of your cabbages in the early part of the winter, what would you do next?

A. Supposing that, by the middle of January, the second, fourth, sixth, and eighth rows of the young cabbages have been used, I would point over with the spade the spaces where they stood, and immediately therein dibble in by line six rows of long-pod beans, at four inches apart, and cover them in.

Q. Should the ground be loose and puffy, what would you do?

A. I would tread it down well, before the beans are dibbled in, as they strike root best in a firm soil.

Q. Well, you have taken nineteen yards for potatoes, and seven for cabbages and long-pod beans; how much ground have you left, and how do you mean to dispose of it?

A. I have twelve yards, or thirty-six feet, left, which I propose to crop in March and April.

Q. In what manner?

A. The remaining portion of twelve yards I would divide into four parallel beds of about three yards in width each:—the *first* for *parsnips;* the *second* for *carrots;* the *third* for *onions;* the *fourth* may be a seed-bed of *cabbage,* sown with *raddish, lettuce,* and early *Dutch turnip.* A narrow slip of the *fourth* or uppermost bed may be parted off for pot-herbs, flowers, or whatever else may be required.

Q. What are the pot-herbs most in request for; the seasoning of soup and broth, or for other purposes?

A. A plant or two of thyme, mint, sage, savory, and marjoram, will be very useful; and a drill of parsley may be sown as an edging.

Q. Anything else?

A. Half-a-dozen or more roots of rhubarb, for the leaf-stalk, which forms a cheap and valuable substitute for fruit in puddings and pies, and is also useful for stewing, either with or without vegetables.

Here the whole subject is brought before the child in a simple but comprehensive point of view. He will not, indeed, be able to take it all in at once, but it is put clearly and distinctly before him; and, each time the plan is drawn afresh, and a fresh piece of information is given, it is assigned by him to its proper place; his mind becomes familiar with the subject, and so turns to it with less and less effort and increased satisfaction, and he becomes permanently interested and informed. Henceforth, whatever the child sees in other people's gardens, as he passes them, engages his observation, and he compares what he observes with what he has been taught at school; and when such subjects form the subject of conversation, he listens with attention, and finds now and then an opportunity of saying something himself, or of asking for further information.

In the "Manual upon Gardening," the subjects which are treated of, after the size and form of the garden, are well suited to keep up interest and engage attention. Such are "the estimated annual produce of a garden; the requisite quantity of seeds; the tools required for garden labours; draining; digging; trenching; ridging; cropping; sowing; planting and transplanting; weeding; and management of crops."

When the Manual proceeds to treat of "the different species and varieties of garden plants," it seems again to be open to the observations which we have already made upon its instruction on manures and soils. It becomes too technical and learned for a first book of instruction in works of industry. With much that is most useful and needful it mixes up botanical names, and even ventures upon classifications which have provoked unfavourable remarks in the "Gardener's Chronicle." It is not our province to speak authoritatively in such matters; but we think we may without presumption venture to observe, that to speak of the same thing—a tuber—both as an underground stem and as a sort of root, is open to the charge of inconsistency, or rather of self-contradiction. But, whether this be so or not, it appears to us imprudent in an elementary work of a practical nature to touch, if it can be avoided, upon subjects which may raise unnecessary doubts, or shake the faith of the learner in the knowledge or competency of the teacher. At all events, we think that the part upon garden plants would have been more generally useful for school instruction if it had been less scientific. This applies also to the parts which treat of fruit trees. But we are wandering from our subject in dwelling upon these points, and exceeding our limits. Our object in noticing them arises simply from a fear that the introduction of such matter into the Manual may render it less generally popular, or prove an obstacle to its adoption in some quarters, where otherwise it would have gained an unhesitating and hearty welcome. To no works that have of late been published, with the view of promoting the education of the poorer classes, do we more heartily wish success, than to the Finchley series of "Manuals of Industry." We are glad to see that one upon the management of animals is some day to appear. It can hardly fail of being exceedingly interesting, and will give a practical character to the reading about animals, which has already been introduced so successfully into our schools. We will now only add the suggestion, that such works might, we think, be introduced with good effect into evening schools for older boys and adults.

LATIN ETYMOLOGY.

No. IV.

THE word *necessitudo* and its relatives have suffered from false views of its origin. That it is connected with *necesse* and *necessum* has of course not been overlooked; but in these words begins the error. Forcellini is, with reason, unwilling to commit himself in favour of any one of the three explanations of *necesse*, which are quoted by him. Some, says he, derive it from *ne* and *cesso*, because where necessity compels one cannot stop; others from *nec esse*; others again, by aphæresis, from αναγκη. The second of these views involves the same kind of error as prevails in the ordinary derivation of *contio*, or, as the dictionaries, in defiance of MSS. and Inscriptions, choose to write the word, *concio*. To deduce *concio* from the first person of an indicative present, *concio*, I summon, or the latter part of *necesse* from an infinitive mood, is a violation of a first principle in etymology—*viz.*, that we must avail ourselves solely of the base of a verb, throwing aside the suffixes which happen to be attached to it for a special purpose. The derivation from αναγκη has this inconveniance in it, that we are directed to a Greek word, the origin of which is far from evident. Lünemann and his followers refer us to *ne* and *cedo*, which, though it gives an explanation so far as the idea of *necessity* is concerned, fails to account for the notion of a mere *connection*, as so often seen in *necessitudo*, *necessitas*, *necessarii*. It will be as well therefore to look out again for some new view; and our safest guide will be *vicissitudo*, from its exceedingly close resemblance to the word we are dealing with. Now no one will hesitate about referring *vicissitudo* ultimately to the little defective substantive, *vic-em*, *vic-e*, &c., however difficult it may be to supply the intermediate steps by which from *vic* we ascend to the polysyllable. The notion of a *turn* at any rate is essential to both *vic-em* and *vicissitudo*. If it be thought an objection, as it justly may, that we are thus brought to a substantive *vic-*, and not to a verb, as the ultimate root, we point to the old verb *vi-* or *vie-*, "bend," as the parent of the sub. *vic-*, "a turn." Nay, as to *bend* and to *bind* are closely related ideas (witness *vi-men*, "the osier twig") we may call in aid the verb *vic-*, whence *vinco*, *vici*, *victum*, the original meaning of which was to *bind*.* In either case, our analogy leads us from *necessitudo* ultimately to *nec*, which bears to the radical part of *nectere*, "to hook on," "to link together," exactly the same relation as *plec*, of our last paper, to *plectere*; and the notion of a link or tie explains all the meanings of the several words we commenced with, *necessity*, as well as *ties* of blood or office.

Moreover, by a not improbable theory, we may supply the intermediate steps as well between *vic* and *vicissitudo*, as between *nec* and *necessitudo*. As *incipio* and *expeto* led to secondary verbs, *incipisso*, *expetesso*; so we assume that from *vic-* and *nec-* were formed two verbs, now passed away from the language, *viciss-o* and *necess-o*; from the former of which came the adverb *vicissim*, in analogy with *carptim*, *sensim*, *raptim*, from their verbs. Again, from the supposed verb *necess-o* was deduced an adjective, *necessi-* or *necesso-* (better known in their neuter forms *necesse* and *necessum*), much as from the verbs *fid-*, *viv-*, *parc-*, came adjectives, *fidus*, *vivus*, *parcus*. We may also, perhaps, if necessary, suppose an adjective, *vicissi-* or *vicisso-*, as nouns in *tudon-* are generally formed from adjectives.

The Greek word *α-ναγκ-η* may now receive from the Latin language a light which it does not find at home. The base of it is *νακ*, corresponding to the Latin *nec*, the *α* being prefixed, as in *α-μα-ω*, *α-γαθ-ο-*, *α-μαυρο-*, apparently for no other purpose than to accommodate those who have a difficulty in pronouncing an initial consonant. That the vowel *α* should be preferred for this purpose, before a syllable containing *α*, is only in obedience to that law of assimilation between adjoining syllables, which was noticed in our second paper, p. 296; and indeed we have but this moment had other marked examples of this principle in the body of *vicissitudo* and *necessitudo*, *incipisso* and *expetesso*.

This habit of prefixing a vowel before an initial consonant, though more common in Greek, is important in its influence upon the Latin language; and it should be noticed that the choice of the vowel so to be employed is generally determined by the vowel sound of the root syllable. Thus we have *ε-θελ-ω*, *ε-ρευγ-ομαι*, *ε-νερθε*; but before *υ* a prefixed *ο* is to be expected, as in *ο-φρυ-*, brow; *ο-νυχ-*, nail; *ο-δυνη*, pain. Not uncommonly after this euphonic vowel has been prefixed a compression of the word takes place, so as in a great measure to disguise the root syllable; and this alike in the Greek and Latin languages. Thus it becomes almost necessary to deal with the two languages conjointly.

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* See our last paper.

It is not a new doctrine now put forward for the first time, that the Greek *ομφαλο-* is a corruption of *ο-νυφ-αλο-*, the Latin *umbon-* of *o-nub-on-*, the radical syllables of which, *νυφ* and *nub*, appear with a vowel *a* in the German *nab-el* and English *nav-el*. The original notion of the root is perhaps best seen in the *umbo* or pointed projection in the centre of a shield, the object of which was probably to prick or spur an enemy in close combat (Liv. iv. 19[*]), the application to the *navel* being secondary. The base of the word is probably found in the Greek *νυσσω*, and our *nudge*.

The Latin *umbra*, or rather *umbera*, for the loss of an *e* seems to be shown by the diminutive *umbella*, in its latter part is similar to *pat-era;* and this being connected with *pat* of *pat-eo*, we search for a verb as the source of *umbra;* but we might search in vain, were it not for the principle just noticed; and then we see that *umbra* is a compression of *o-nub-era*, the radical syllable *nub* being that which we well know in *nub-ere*, *neb-ula*, *nub-es*, the connection between a cloud and shadow being evident. The Greek has the same root in *νεφ-ες-* (nom. *νεφ-ος*), "clouds, mist," &c., and the appearance of a Greek noun with this neuter suffix is perhaps always something like a warranty for inferring the previous existence of a verb. The German again has *neb-el*, "mist."

The Latin *ungui-*, "a nail," *ung-ula*, "a hoof," and *unco-*, "a hook," have been long known to represent the Greek *ο-νυχ-*; so that in these words a compression from an older form, *o-nug*, or *o-nuc*, has been indirectly assumed. It has also been long believed that the same root exists in the German *nag-el*, and consequently in our *nail*. Much more confidence will probably be felt in these several derivations, if it be observed that the letter-changes, however numerous, still in a manner follow a law. In the three triplets:—1. *ο-νυφ-αλο-* (*ομφαλο-*), *o-nub-on-* (*umbon-*), and *nab-el*, G.; 2. *νεφ-ες-* or *νεφ-ελη*, *o-nub-era-* (*umbra-*), and *neb-el*, G.—3. *ο-νυχ-*, *o-nug-ula* (*ungula*), *o-nug-i-* (*ungui-*) or *o-nuc-o-* (*unco-*); and *nag-el*, G.,—it will be seen that the Greek prefers a final aspirate for the root, *φ* or *χ*; the German a medial, *b* or *g*; and the Latin also a medial, with the one qualification, that in the last series a *g* and *c* interchange. Again, if in *nab-el* the German substitutes an *a* for the *u* of the classical languages, so also does it in *nag-el*.[†]

In the preceding argument we have referred the words of the first two triplets ultimately to verbs. We must also claim the last series for the verb with which we commenced, namely *nec* of *nectere*, "to hook on." The nails of animals have the shape which is requisite, and are often employed in this office, and the nails of man himself in the savage state are often purposely left long, although his teeth might be used as a substitute for the scissors of civilized life.

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[*] A reference we borrow from Mr. Rich's excellent dictionary.

[†] In the former of these words, *nab-el*, the *a* has the sanction of the Greek language itself, if *αμβων* be really the same as the Latin *umbo*, for then it will imply a longer form, *α-ναβ-ων*. Leaving this open~~, we would ask whether *αμβλυ-* be a~~ compression of *α-ναβ-λυ-*, i. e. "without a point?"

The adjective *uncus* is often used in reference to the talons or claws of birds, but the substantive *uncus* is practically confined to metallic hooks. Still the notion of the nail in all probability once belonged to the substantive also; and if so, we have a satisfactory origin for *uncia*, "an inch," or, etymologically, "a nail." Thus, the word will be a feminine adjective, with some such noun as *mensura* understood. The terms, *foot*, *cubit*, *ell*, *pouce*, being, without exception, derived from parts of the body, make it all but certain that *uncia* must have had a similar origin; and thus its use as a measure of weight or capacity will be only secondary.

We need scarcely stop to claim for the root *nec*, or in Greek, *νακ*, a large number of derivatives with a sense of a hook or bend, as *αγκ-ων*, *αγκυρα*, *αγκ-ες-* (nom. *αγκος*), *αγκυλο-*, *ογκο-*, and our own *nook*.

The Latin *imber-* or *imberi-*, (nom. *imber*,) corresponding to the Greek *ομβρο-*, by its form suggests the question, whether it may not have been subjected to the same process of compression; but the fact we believe will be found to be otherwise. The root however with which we suspect it to be connected has been to a great extent, if not wholly lost sight of by lexicographers.

We have already in the present paper said that the appearance of a Greek substantive with the neuter suffix *-ες*, or in the nom. *-ος*, as, *γεν-ες-*, *μερ-ες-*, *νεμ-ες-*, leads to the presumption of a verb from which it is deduced. The same holds good for the corresponding Latin names which end like *gen-es-*, or *frig-os-*, (nom. *genus*, *frigus*). From such nouns we cannot separate the neuter substantive *ub-er*, and hence look around for a verb *ub*. Again, adjectives in *ero-* or *eri-*, as, *pig-ero-*, *creb-ero-*, *ac-eri-*, *put-eri-* (nom. *piger*, *creber*, *acer*, *putris*), being in immediate connection with verbs, the adjective *uberi-* (nom. *uber*,) backs the point, so to say, of the substantive *uber*. This substantive is also written with an aspirate, *hub-er*; and thus, without any necessity for going out of the limits of Latin to the Greek *ὑ-ω*, we are reminded of *hum-esco*, *hum-eo*, *hum-or*, *hum-idus*, or as Wagner writes them in his last edition of Virgil, on the strength of the Medicean and Vatican MSS., *umor*, *umidus*, &c.; also, of *uv-idus* and *uv-esco*. The theory we are supporting supposes that the lost verb *ub* signified "to pour;" and this meaning will explain the various senses of both the adjective and substantive *uber*, better, we believe, than any other. The lexicons have done much to conceal the connection between the two words *uber*, by giving to the adjective, as its first meaning, "fertility of soil," and to the substantive the "dug of an animal." This we strenuously resist, and contend that *flowing* is the primary notion of both. Thus the Lucretian line, (v. 883,) Ubera mammarum in somnis lactantia quærit, is literally translated by the words, "Seeks in its dreams the milky streams of the breast;" and if this noun is also applied to the fertility of land, or of a tree, as it undoubtedly often is, the metaphor is from the same idea of streams of milk. So at least Columella thought, when, even in the prose portion of his work (iii. 21), he wrote:—Alma tellus vitibus, velut æterno puerperio læta, mortalibus distenta musto demittit ubera.

The substantive *uber-tat-*, though, as its termination tells us, it is more nearly connected with the adjective than with the substantive *uber*, still exhibits the same idea of flowing in the Plinian phrase (vii. 76, xxii. 39), *ubertas lactis*. But what we have said will be apt to suggest the idea that the flowing is of milk alone. To correct any disposition thus to narrow the meaning of the words, we need but look at the four passages given by Forcellini, from Cicero, Lucretius, and the poet Seneca, where the flowing is of water; and the three passages, where it is applied to streams of tears. Nay, the abverb *ubertim*, in every passage where Forcellini met with it, and those not a few, was used exclusively of a flood of weeping. It should also be recollected that the adjective *uber* (to say nothing of *ubertus*) and the substantive *ubertat-*, are used repeatedly of fluency of speech. And, if fertility of soil be not a rare meaning of some of these words, we must keep in view, that for a southern climate fertility depends more on an abundant supply of water than any other cause. At any rate our ears are familiar with the phrase: " a land flowing with milk and honey."

But we must claim two more words as derivatives of our root *ub*, " pour:" first *uva*, " a bunch of grapes." That in the bunch of grapes a Roman saw what reminded him of a mother's breast, partly perhaps from the external form and partly from the liquid contents, has already appeared in the quotation from Columella. The same idea was present when the epithet of *bimammia* was first given to that particular vine whose clusters hang in pairs. We have a further confirmation of this view in the remarkable coincidence, by which *uva* in Virgil, Juvenal and Pliny, and *uber* in Palladius, are both used for the bag-like form of swarming bees.

It not unfrequently happens that a word has such a shape and meaning that it becomes difficult to decide between the claims of two different etymologies; and even two words of wholly different origin and meaning, by an accidental identity of form, at times mutually act upon each other, so as to blend their meaning.* In the common phrase, " the trade and mystery of a goldsmith," the second substantive should be written *mistery*, being only an equivalent for the Latin *ministerium*, Italian *mestiere*, French *métier*. Yet, as now used, the word has attracted to itself something of the sense of mysterious, though it can claim no descent from the Greek *μυστηρια*.

With this premised, we venture to express a belief that the Latin verb *abundare* is erroneously referred to the preposition *ab*, and substantive or verb *unda-*. It comes directly from the adjective *abundus*, which happens to be less familiar than its adverb *abunde;* yet the adjective occurs in Accius as well as Gellius. Now, if this adjective had been deduced from *unda*, it could only have signified " without wave or without water," which would have been very different from its actual meaning. Had we access at the present moment to the writings of Vossius, we should refer to him with more certainty. As it is, we must rely on the statement in Forcellini, that the German scholar found *in antiquis quibusdam codicibus*, that the verb was written with an aspirate, *habundare*. Such an orthography, if established, would be decisive against all connection with the preposition *ab*. On the whole, we contend that the adjective *ab-undo-* is for *ub-undo-*, being merely a participle from our verb *ub*; just as *secundo-*, " second," is but another form of *sequendo-* " following," and *rot-undo-*, as we hope on an early occasion to show, is the participle of another verb. To prevent misconception we repeat that in our view *abundus* and *abundare* came into the Latin language from the verb *ub;* with the sense of flowing and abundance, but not overflowing. At the same time we are fully ready to admit that the Romans finding the word in existence, some of them by a natural error referred it to the same origin as *redundare*, and so at last used it as an equivalent for that verb. Thus in speaking of the overflow of the Alban lake, Livy has *abundare*, while *redundare* is found in the more correct writer, Cicero.

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* See Mr. Talbot's English Etymologies, *passim*.

To this verb then, *ub* " pour," we refer the Greek *ομβρο-* and the Latin *imber-* or *imberi-*.

Grouville, Sep. 18, 1850. CLAUDIUS.

ON TEACHING ARITHMETIC.

1. IN all ages, and among all classes of people, arithmetic has been regarded as an essential part of school instruction. The reason of this is evident.

(*a*) In every position, in every circumstance of daily life, calculation is useful, necessary, nay indispensable. To the husbandman, to the mechanic, to the man of business as well as to the man of science, the power to calculate or count correctly is of primary importance.

(*b*) Arithmetic is an excellent means of developing the intellectual faculties of the young, and of habituating them to reflection and to close and rigorous reasoning. The benefits resulting from this branch of instruction are often, however, rendered useless from the plans that are adopted in teaching it to children.

2. Within the last few years this subject has attracted the attention of men skilled in the art of communicating, as well as in the theory of numbers; and they have given to the scholastic world the results of their studies and labours. From the successful operations of the Normal colleges numerous schools have been enabled to receive the practical schoolmaster—one who does not operate according to rules, but according to principles. The only thing, however, to be feared is, that this branch of instruction occupies a place in many schools which is detrimental or prejudicial to others. Although of considerable importance, yet it ought not to be made the *sine quâ non;* there are other subjects of as great, if not greater importance, which demand on the

part of the teacher as much time, and skill, and knowledge, and which, on no account, he ought to neglect or deprive of their legitimate share of time and labour. In every school the *technical* branches of instruction should have relation to the wants of the district, the ages of the pupils, and the harmony necessary to be kept up among the separate subjects. And no one *technical* subject ought to be allowed to occupy a position which would be prejudicial to another, or which would compel it to have less time devoted to it than its importance, in a social or moral view, justly demands.

3. Many, in teaching Arithmetic, begin by telling the *names* of the numbers; and they believe that when, with considerable difficulty, they have been able to make the children repeat these names in a certain order, they have taught them to *count* and to *know* the value of numbers. Of Numeration, the basis of Arithmetic, of the different values of the figures arising from their position, not a word is said. The next step is to write the figures on the blackboard, and make the children copy them; or, what is preferable, because it gives less trouble, they are required to copy them out of a book, and then *learn them by heart*. They are now considered sufficiently prepared and instructed to begin addition. And the teacher says,—"Write all the numbers the one under the other; units under units, tens under tens, &c.; add the figures in the first column: if this sum is composed of two figures, put down that which is found at the right and add the other figure to the following column," and so on. Instruction given after this manner is a routine which is fatal to the development of the intelligence. The child becomes a mere *machine;* he comprehends nothing, and can explain the operations which he performs neither to himself nor to others. When a question is proposed to children thus taught, they generally ask under *what rule it comes*, before they attempt to give a solution. The mind is left in complete obscurity as to principles, and this branch of instruction, the proper study of which contributes so much to form the judgment and to develop the intellectual faculties, becomes a mere routine, a system of rules.

4. It must be evident to the most superficial observer, that the plans previously noticed are directly opposed to the fundamental principles of education. We should always proceed from the *known to the unknown*—from the *easy to the more difficult.* Each succeeding step should depend upon that which has gone before. We must lay the foundation firmly and surely, and upon that, gradually and systematically, raise our structure. The education which does not fulfil these necessary conditions is false in principle.

5. The knowledge of numbers, therefore, should be *gradually* introduced to the minds of children, and should be based upon *sensible objects.* Children should be made to count or calculate about what they can see, before engaging in abstract calculations. It is useless to make them reckon in *idea;* things which they can see, feel, and count with *practically* must be placed within their reach; and the more familiar and interesting those are, the more clear and definite will their notions be.

6. Mental calculations ought, therefore, always to precede written calculations. And when the children begin the practice of slate arith-

metic, the two should go on hand in hand; the one is a great aid to the other. Mental arithmetic is the necessary attendant of written calculations; it is also of more general and immediate application. The former can *always* be practised; the latter requires the aid of at least a pencil and a slate.

To assist in mental calculations, some make use of ***beans, cubes, counters***, &c.; others employ ***lines, circles, dots***, &c., formed on the blackboard. All these means lead to the same end—that of giving to children ***intuitive ideas*** on the knowledge of numbers. Care, however, must be taken that they do not confound the number with the qualities of the objects employed, or attach the idea of number to the objects themselves. In order to obviate this, the pupils should be exercised on ***different objects*** in succession, and, finally, ***without these objects***, so as to make them understand that they must direct their attention, not to the ***quality***, but rather to the ***quantity*** of the objects. These objects, too, must always be of the same sort or kind.

7. No attempt should ever be made to add by signs or figures until the children have been taught to add by means of sensible objects. When they have, to some extent, become familiarized with combinations, and the names by which such combinations are denominated, then they should be taught the symbols or figures that are employed to represent them. When they know that one cube and one cube are *two* cubes; that two cubes and one cube are ***three*** cubes; then the figures 2 and 3, which represent these combinations, should be given. Or, in order to show the connection between the symbols and the operations for which they stand, the teacher may exhibit them on the blackboard in the following manner:

● = 1 or ❙ = 1 or o = 1
● ● = 2 " ❙ ❙ = 2 " o o = 2
● ● ● = 3 " ❙ ❙ ❙ = 3 " o o o = 3
● ● ● ● = 4[*] " ❙ ❙ ❙ ❙ = 4 " o o o o = 4

and so on as far as the number ten.

8. It is highly necessary that no new step be taken until the preceding one is thoroughly understood. A great secret in successful teaching is the connecting or dovetailing of lessons: it is the grand power by which the whole structure is rendered firm and secure. What the peg or pin is to the carpenter, the dovetailing of lessons is to the teacher and the pupils. No new lesson should ever be given without connecting it with the last by a series of questions. If the children show, by their answers, that they fully and clearly comprehend the last lesson, then the new one may be safely imparted.

The following method of giving children their first ideas of number is only one of many that might be successfully practised:—

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[*] If the sign = is used, it must be explained by the teacher.

MENTAL CALCULATION.

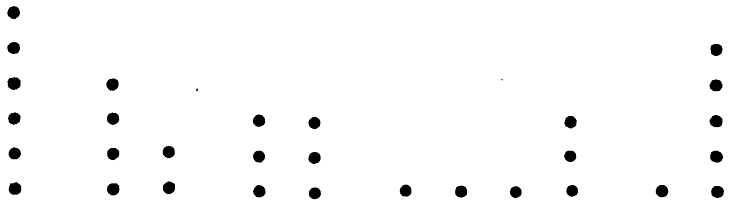
FIRST LESSON.

Addition of Units from One to Ten.

1. The teacher ought to have various objects to operate upon, such as cubes, pebbles, buttons, &c. He ought also to have a table on which they may be placed, taking care, however, that it is of the proper height to allow the children to see all the objects distinctly. In using the *cubes*, I would recommend a table with a sloping top. This can easily be effected. Let a table be made having two hinges and two brackets, with sloping surfaces: when the sloping side of the table is required, you have only to raise the brackets. Let a portion of this table be divided, by slips of wood, into perpendicular columns of sufficient width to receive the cubes; we are now in a condition to begin the lesson. Cubes of *different colours* are exceedingly useful.*

2. Place *one* cube in one of the perpendicular slips, then ask the children how many there are. If they cannot tell, then the teacher must say, *One* cube: they then repeat after him, *One* cube. Put another above it, and say, *One* cube and *one* cube are *two* cubes. Put another and say, *One* cube, and *one* cube, and *one* cube, are *three* cubes; or, *Two* cubes and *one* cube are *three* cubes.

3. Go through the same process with four, five, &c., until the idea of the number ten has been thoroughly impressed. Vary the exercise by using other objects, such as pebbles, marbles, &c. The lesson may also be varied by arranging the cubes in the slips in different ways; as, for instance, the number six:—



A better plan is to call on some of the children to show in what different ways any number may be arranged. This exercise highly delights them, and shows at the same time whether they have a correct idea of the number required.

4. The questions to be proposed may be classified under three distinct divisions.

(1) *Questions by showing the objects; or, questions by intuition.*†

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* Cubes of this sort, called Ryffell's Calculating Cubes, are sold at the National Society's Depository.

† *Intuition* is, as it were, the direct and immediate contemplation of objects: it substitutes the thing for the definition, the reality for the formula. Intuition contemplates things face to face, and brings the child into immediate contact with things as they really are. It compels him to observe, it leads him to reflect and think.

Thus the teacher says, *holding in his hand* the objects, *Two* balls and *one* ball are how many balls? *Six* cubes and *one* cube? &c.

(2) *Questions without intuition, naming, however, the objects to be counted.* Thus, *Three* nuts and *one* nut make how many nuts? *Five* buttons and *one* button? and so on.

(3) *Questions without intuition, and without naming the objects.* Thus, *Four* and *one* are how many? *Seven* and *one?* &c.

5. The following questions are constructed according to the forms 2 and 3.

(*a*) One nut and one nut? Three men and one man? Two dogs and one dog? Seven books and one book? And so on.

(*b*) One and one are, how many? Four and one? Seven and one? Five and one? Eight and one? And so on.

6. Questions similar to the following may also be proposed after the children have been well exercised in the preceding.

(*a*) Name the numbers from three to nine. Those between four and seven. Those between six and one.

(*b*) What number follows seven? What comes after five? What goes before nine? What comes between three and five? What number is found between six and four?

(*c*) Count the number of bottles in one desk. The number of windows in the school-room. The number of buttons on your jacket. The number of steps in the gallery.*

7. They may also be required to bring objects from the table. Thus, bring three tops, four buttons, five pebbles, two cubes, and six counters, &c.

8. The following are general questions:—

1. How many fingers have you on one hand, if you count the thumb?
2. How many thumbs have you?
3. How many hands will a pair of gloves cover?
4. How many thumbs and little fingers have you?
5. How many legs have a chair and a wheel-barrow?
6. How many legs has a cat?
7. How many more legs has a cat than you have?
8. How many more legs ought you to have, to have as many as a chair?
9. How many ears have two horses?
10. What animal has no legs?
11. If you have two apples, and I give you three more, how many shall you have?
12. How many legs have one sparrow, one dog, and one snail?

(*To be continued.*)

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* The questions not to be given, if the results are more than *ten*.

GENERAL EXAMINATION OF CANDIDATES FOR CERTIFICATES OF MERIT.

EASTER, 1850.

Mistresses.

ARITHMETIC.

SECTION I.—Write out the rules by which you would work sums in—

1. Simple proportion. 2. Practice, or 3. Compound proportion, instancing your rules by an example, and explaining each step in the process of working it.

SECTION II.—1. Multiply £172 13*s*. 7¼*d*. by 246, and divide the answer by 82.

2. Find by practice the value of 79 articles at 13*s*. 8¾*d*. each.

3. Find the value of $\frac{3}{7}$ of a pound sterling. Reduce 5*s*. 6*d*. to the fraction of a pound.

SECTION III.—1. If an allotment garden allowed to a labourer be considered equal to one third of his weekly wages, and his wages at the end of a quarter amount to £5 17*s*., what would be the yearly value of the allotment, and what the labourer's weekly wages including the allotment?

2. If a family of seven persons consume 6*s*. 2¼*d*. worth of bread per week, when bread is at 5*d*. for the 4lb. loaf; what is the quantity of bread consumed daily by each person?

3. If it cost £417 11*s*. 6½*d*. to board 29 pupils in a training institution for 10 months, what would be the additional expense of boarding 15 other pupils for 13 weeks?

SECTION IV.—What do you understand by book-keeping? Explain your answer by examples.

2. Give the meaning of the following terms:—cash, contra, stock, on hand, balance, folio, posting, taking stock.

3. What is the general plan of book-keeping adopted in those trades where goods are sold out in small quantities? In what way can a balance of the goods on hand be taken?

ENGLISH GRAMMAR AND LITERATURE.

SECTION I.—1. In what words is the *h* mute or doubtful? Give the best rule for dividing syllables.

2. Classify the elementary sound of the English language. Compare the flat and sharp mutes.

3. Write out the rules for the construction of relative pronouns, and give one or more examples with each rule.

SECTION II.—1. Classify the forms of the past tense and participles of verbs.

2. Explain the use of the colon, semicolon, and comma; andconstruct two sentences to exemplify the rules.

3. Explain the construction of the following sentences:—

Philip had no other resource than to send his rival a challenge, to meet him in the open field; which being refused, he was obliged to decamp with his army.

To his last moments he never forgot the early friendship which he had borne their father;—a strong proof of the good dispositions of the prince.

Section III.—Write a clear and simple paraphrase of the following passage, exactly expressing the sense of each sentence. Give the meaning and derivation of the words in *italics*.

One *adequate* support
For the calamities of *mortal* life
Exists—one only; an assured belief
That the *procession* of our fate, howe'er
Sad or disturbed, is ordered by a Being
Of *infinite benevolence* and power;
Whose everlasting purposes embrace
All accidents, *converting* them to good.
The darts of anguish fix not where the seat
Of suffering hath been thoroughly *fortified*
By *acquiescence* in the will *supreme*
For time and for eternity; by faith,
Faith *absolute* in God, *including* hope,
And the defence that lies in boundless love
Of His perfections; with *habitual* dread
Of aught unworthy conceived, endured
Impatiently; ill done, or left undone,
To the dishonour of His holy name.

Section IV.—1. Name the earliest writers in English poetry and prose, and give some account of their works.

2. Name the writers of the Elizabethan age, and give an account of the chief works in prose of that epoch.

LITURGY AND CHURCH HISTORY.

Section I.—1. Who was the first Bishop of Jerusalem? Give reasons from Holy Scripture for your answer.

2. What proofs have we that the early English Church was independent of Rome?

3. Who were the Friars? Name the chief orders of them; and state at what period they first found their way into England.

Section II.—1. What was the condition of the British Church in the sixth and seventh centuries, and what was the chief Bishopric of Britain at the time?

2. What is meant by a Legate? What his functions? At what period do we find him first mentioned in English history?

3. Give some account of the dispute between King John and Pope Innocent III. What course was pursued by the Pope, and what were the consequences?

Section III.—1. Give some accounts of two of the following: Erasmus; Melancthon; Jerome of Prague; Bishop Kenn; Ridley; Hammond; Sir M. Hale.

2. Who were the chief English "Reformers?" What were their in-

tentions in the English Reformation — in conducting it, by what rules were they guided?

3. For how long a time was the divorce of Henry VIII. pending? How do you account for this delay?

SECTION IV.—1. Name the three Creeds of the Church: account for their names: state in what part of Divine Service each is used. What does the Church of England in her Articles state respecting them?

2. What is the Romish doctrine concerning Purgatory? What was the origin of it? What does the Church of England say respecting it?

3. In what language were the "Liturgies" in Europe originally written? Was there any alteration in this matter during the middle ages? If so, what? What does the Church of England in her Articles say on the subject?

SECTION V.—1. By whom were the 39 Articles compiled? at what time? for what purpose?

2. What does the Church of England say respecting the denial of the Cup to the Laity? quote the Article. What was the practice of the early Church in this matter?

3. Give some account of the Episcopal Church in Scotland; in what respects does it agree with, in what differ from, the Church of England? in what way was it mixed up with the events of the reign of Charles I.?

SCHOOL MANAGEMENT AND NOTES OF A LESSON.

SECTION I.—Sketch the ground plan of your school, showing the position of the desks and benches; state the subjects of instruction, the number of hours employed in each during the week, and the method which you adopt in imparting instruction in (α) writing, (β) spelling, (γ) geography, (δ) arithmetic, (ε) grammar.

SECTION II.—Write the heads of a collective lesson for the classes in an elementary school on the life of—

1. Rebecca. 2. Ruth. 3. Dorcas.

SECTION III.—Write the heads of a collective lesson for the upper classes in an elementary school on the manufacture of—

1. Cotton. 2. Wool. 3. Glass.

SECTION IV.—1. How would you employ Pupil Teachers in instructing the upper and lower classes of your school respectively?

2. How would you arrange for the special instruction, out of school hours, to be given to three Pupil Teachers, all of different standing, engaged in your school at the same time?

SECTION V.—Explain how you would treat the following cases:—

1. A Pupil Teacher has given a pert reply to one of the committee, and is supported by her mother in her conduct.

2. A Pupil Teacher's style of dress is unbecoming her station.

3. The brothers of a girl in the school keep bad company; she is much with them.

ROYAL NAVAL SCHOOLS, GREENWICH HOSPITAL. EXAMINATION PAPERS BY THE REV. HENRY MOSELEY, M.A., F.R.S., &c., HER MAJESTY'S INSPECTOR OF SCHOOLS.

MIDSUMMER, 1850.

NAUTICAL SCHOOL—SENIOR DIVISION.

(*One Question only is to be answered in each Section.*)

SECTION I.—1. If a straight line be divided into any two parts, the square of the whole line is equal to the squares of the two parts, together with twice the rectangle contained by the parts. Mention the corollary to this theorem.

2. In a circle, the angle in a semicircle is a right angle; but an angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

3. Similar triangles are to one another in the duplicate ratio of their homologous sides.

SECTION II.—Solve one of the equations:—

$$1.\ \frac{x+6}{4}-\frac{16-3x}{12}=\frac{25}{6}$$

$$2.\ \sqrt{a+x}+\sqrt{a-x}=c$$

$$3.\ \left.\begin{aligned} x+y+xy&=11\\ x^2y+xy^2&=30\end{aligned}\right\}$$

SECTION III.—1. A. had 18 shillings in his purse; and B., when he had paid A. two-thirds of his money, found that he had now remaining two-fifths of the sum A. now had: what had each at first?

2. A bill of 25 guineas was paid with crowns and half-guineas; and twice the number of half-guineas exceeded three times that of the crowns by 17: how many were there of each?

3. A railway train, after travelling an hour, meets with an accident which detains it another hour, after which it proceeds at $\frac{3}{5}$ of its former rate, and arrives at the terminus 3 hours behind time; but had the accident happened 50 miles further on the line, the train would not have been so late by $1^h.\ 20^m.$: find the length of the line.

SECTION IV.—Prove one of the following formulæ of Plane Trigonometry:—

$$1.\ \frac{a}{b}=\frac{\sin A}{\sin B}$$

$$2.\ \text{Cos}\,(A+B)=\cos A\cos B-\sin A\sin B.$$

$$3.\ \text{Cos}\,B-\cos A=2\sin\frac{1}{2}(A+B)\sin\frac{1}{2}(A-B).$$

$$4.\ \text{Sin}\,A=\frac{2\sqrt{S\,(S-a)\,(S-b)\,(S-c)}}{b\,c}$$

Section V.—1. State and prove the properties of the supplemental triangle.

2. Show that

$$\text{Sin}\,\frac{A}{2} = \sqrt{\sin (S - b) \sin (S - c) \operatorname{cosec} b \operatorname{cosec} c.}$$

3. Show how one side of a spherical triangle may be determined, having given the two other sides and the included angle.

Section VI.—1. Investigate a formula for determining the dip of the horizon.

2. Investigate a formula for computing the equation of equal altitudes.

3. Show how the latitude and the time may be determined by the method of double altitudes.

Section VII.—1. From a given point without a given straight line, to draw a line making an angle with the given line equal to a given rectilineal angle.

2. Any rectangle is the half of the rectangle contained by the diameters of the squares described on its two sides.

3. If from any point in a circular arc perpendiculars be let fall on the radii to its two extremities, the distance between the feet of these perpendiculars is invariable.

Section VIII.—1. Find the sums of the two series:—

$$\frac{3}{2} + 1 + \frac{2}{3} + \text{\&c. to 6 terms.}$$

$$\frac{1}{2} + \frac{3}{4} + 1 + \text{\&c. to 10 terms.}$$

2. Write down the third term of the expansion of $(a^3 - x^3) - \frac{1}{3}$

3. Find the amount (M) and present value (P) of an annuity (A) for (n) years, at compound interest (r).

Junior Division.

(*One Question only is to be answered in each Section.*)

Section I.—1. How have the dimensions of the earth been found?

2. What would be the effect upon the earth's temperature if its axis coincided with the plane of its orbit; and what if it were perpendicular to it?

3. On what causes does the variation of the brightness of the planet Venus depend?

Section II.—1. The base of an isosceles triangle is 500 feet, and the vertical angle 33°; find the sides.

2. To determine the distance of a ship at anchor at C, I measured a straight line A B = 1000 yards along the shore, and observed the angles C A B = 32° 10′, and C B A = 83° 10′; required the distance of the ship from A.

3. The angle of elevation of a tower, 100 feet high, due north of an

observer, was 50°; what will be its elevation after walking due east 300 feet?

SECTION III.—1. Sailed from Cape Finisterre, lat. 42° 54′ N., long. 9° 20′ W. on the following courses: N.W. by N. 78 miles, N. 80 miles, N.N.E. 65 miles, N.W. by W. 94 miles, S. by E. 49 miles; required the latitude and longitude come to.

2. Find the course and distance from the Lizard, in lat. 49° 57′ N., long 5° 15′, and St. Mary's, lat. 36° 57′ N., long. 25° 9′ W.; by middle latitude, and also by Mercator's sailing.

3. Find the distance upon a great circle between the Cape of Good Hope, lat. 34° 22′ S., long. 18° 26′ E.; and Hobart Town, lat. 42° 54′ S., long. 147° 26′ E., and the greatest latitude arrived at.

SECTION IV.—1. July 21, 1850. The setting amplitude of ⊙ in lat. 27° 32′ S., long. 170° E., was W. 23° 15′ N. by Azimuth compass. Required the variation of the compass. (Greenwich date 20d. 18h.)

2. November 7, 1850. At $5\frac{1}{4}$h. P.M., in lat. 11° 55′ 10″ S., supposed long. 144° E., chronometer 7h. 38m. 51s., ⊙ 9° 49′ 20″; index error – 2′ 30″, height 20 feet. Determine the long. by chronometer. Chronometer slow of Greenwich time, October 25, $12^{s}{\cdot}5$. Losing daily $0^{s}{\cdot}6$.

SECTION V.—1. Describe and explain the vernier.

2. Describe and explain the sextant.

3. In determining the latitude by the sun in tropical climates, and also by a star when near the zenith, by observations of the meridian altitude at sea with the sextant; explain the best practical precautions to be taken to insure accuracy.

UPPER SCHOOL.—FIRST CLASS.

A sentence will be read to you, which you must write out with a careful attention to the penmanship and spelling.

1. Parse the words printed in italics in the following sentence:—

"*A memory which* is *both quick* and retentive is a great *treasure.*"

2. Correct the following sentence, and give grammatical reasons for the corrections you make.

"Him and me goes home together."

3. Draw a map of North America.

4. Show from the courses of the rivers of Europe, where its high lands must chiefly be situated.

5. Write out in the order of their succession the names of the sovereigns of the house of Plantagenet.

6. Add together the sum, difference, product, and quotient of $9\frac{3}{8}$ and $4\frac{8}{15}$.

7. Of the boys in a school $\frac{5}{18}$ are in the first class, $\frac{3}{16}$ in the second, and $\frac{1}{8}$ in the third; in the remaining three classes there are 53 altogether: how many boys are there in the school?

8. If the true length of the year is 365·242264 days, instead of

$365\frac{1}{4}$ days at which it is commonly reckoned, what will the error amount to in 4 centuries?

(Only one Question is to be answered in each Section.)

SECTION I.—1. Reduce to their simplest terms,

$$\frac{2a^3x^2}{6a^4x} \text{ and } \frac{a+x}{a-x} + \frac{a-x}{a+x}$$

2. Show that

$$\frac{a - ax + x^2}{a + x} = a - 2x + \frac{3\,x^2}{a + x}$$

SECTION II.—Solve the questions:—

$$1.\ \frac{12x - 2}{6} - \frac{18 - 4x}{3} = x + 2.$$

$$2.\ \frac{11}{12\,x + 11} + \frac{5}{6\,x + 5} = \frac{11}{6\,x + 11}$$

$$3.\ \sqrt{112 - 8\,x} = 19 + \sqrt{3\,x + 7}$$

SECTION III.—1. A father left to his two sons 1000*l.* To the younger he gave half of what he gave to the elder and 10*l.* more; what had they each?

2. At what price per head must a farmer purchase a flock of 100 sheep, that expending 10*l.* in feeding them, and losing 9, he may be able to sell the remainder at 2*l.* each and gain 20*l.*?

3. I turn over the pages of a book by fours and find three odd ones. I then turn them over by fives and find two odd ones. The last time I do not turn them over so often by twenty times as I did the first. How many pages were there?

SECTION IV.—1. The opposite sides and angles of parallelograms are equal to one another, and the diameter bisects them.

2. In a circle, the angle in a semicircle is a right angle; but the angle in a segment greater than a semicircle is less than a right angle; and the angle in a segment less than a semicircle is greater than a right angle.

3. Define a *Rhombus;* and prove that the diameters of a rhombus bisect each other at right angles.

SECTION V.—1. Show that the chord of 60° and tangent of 45° are each equal to the radius.

2. Show that the sides of plane triangles are to one another as the sines of their opposite angles.

3. From the bottom of a tower, A C, a distance, A B=50 yards, is measured on a horizontal plane, and at B the angle A B C is measured=25° 17′; required the height of the tower.

Notices of Books.

ENGLISH SYNONYMS DISCRIMINATED BY W. TAYLOR, OF NORWICH. WITH A COPIOUS INDEX. Reprint. (London: *E. Lumley.*)

THERE are two ways of benefiting by the wisdom of a friend in whose judgment we repose absolute confidence. One, when we gather instruction from him, digesting as we feed, and gradually interweaving his precepts with our practice and opinions: another, when we rush to him in some desperate strait, and clamour for a swift antidote against the effects of our own ignorance and folly. It is in emergencies of the latter kind that applications are generally made to our dictionaries. Some word in the passage before us, whereof we do not comprehend the meaning; or, if we are writing, some doubt about orthography, drives us to our book of reference. The information thus gained, like the extempore counsel in the former case, is rarely good for more than the present occasion—is seldom, in fact, thought of afterwards. Those who carry with them small dictionaries to ensure epistolary correctness, would confess, if they told the truth, that they are obliged to recur to the secret oracle again and again for the spelling of the same word. Shame and our dictionaries however preserve us for the most part from any gross blunders in our orthography, whilst we commit ourselves to a loose and precarious usage of terms with unsuspicious confidence.

We have often thought that some work of a premonitory kind, on the true force and meaning of many of the words in our language, might be of the greatest service as a school exercise book, and we are glad to see a reprint of the "Synonyms," far less as a book of reference, than, first, as it is likely to force upon the minds of English students the simple fact that there are distinctions, and very important distinctions, between words which they may be disposed to consider as synonymous; and, that to write a correct and forcible sentence something more is wanted than accident and harmony; and again, to give, if not a complete list, a considerable number of the instances in which such confusion is most likely to occur. Crombie's Gymnasium, or an abbreviation of it, is used very generally in our classical schools, to point out differences, and ensure precision in the use of those Latin words which a young scholar would be most likely to confound; and we cannot conceive why some precaution of the same kind should not be taken in the case of our own language.

We may premise that Mr. Taylor's book is, in many respects, an excellent one: probably, both from its size, and for other reasons, better adapted than any work extant for the purpose at which we have hinted. Of what appear to be its faults we shall speak without hesitation, chiefly with the view of suggesting to those who may be competent to undertake it, the description of work best calculated to answer the end before alluded to.

If our boys could be trained in the habit of considering the true value of words, the next generation might be spared an inconceivable amount of vapid trash written and spoken, even *ex cathedrâ;* members of the Commons might get to bed in decent time: and we should not be obliged to hear the use of idle words condemned from the pulpit in words almost as idle. But to proceed with the work before us; as fair and favourable specimens we would instance the following:—

> "INTENTION—PROJECT—DESIGN—PURPOSE.
>
> "Mark the progress of the mind from incipient to decisive volition. * * * Intention is the feeblest effort, a mere stretching (*in* and *tendo*) of the mind towards its object. In a project (*pro* and *jacere*) the object is already flung before the contemplation. When the mind has planned an entire scheme, it is said to have formed a design (*dessein*); and when the means of execution are put forth [query] (*propositum*) the purpose is complete. Contemplative benevolence is a soothing pastime: we intend relief to our suffering fellow creatures; we project aerial castles of consolation; and design such good deeds as are within the reach of our means: but how often indolence frustrates the kindness of our purpose.
>
> "REVIEW—CRITICISE—CENSURE.
>
> "To review a work is to overlook it for the purpose of finding some account of its contents: a reviewal may be a mere analysis, without any commentary. To criticise is to appreciate, to give a motived judgment, whether favourable or unfavourable; to censure, is to pass a sentence of blame."

And here we may introduce an incidental remark made by the author under the head of Dealing, Trade, &c., as applicable to a great many instances throughout the book, in which, without a similar caution, he points out distinctions where our best authors do not recognise a difference. "These words are used with so little precision that we must rather inquire what ought to be, than what is, their respective employment." In fact, whether right or wrong in their derivations, we do not think that any author in our language would bear to be strictly examined by Mr. Taylor's book.

One of the worst faults in the work is its want of system. In some cases the author gives the etymological root, whilst in others he entirely omits it. Sometimes he insists on the retention of the primary sense and binds us to the etymon, and sometimes he is more lax, and seems disposed to sanction the change of sense which has been gradually adopted. Thus, when he is distinguishing between "charms" and "graces," he says nothing about the origin of either word: nor, in the explanation of the former word, does he pay the slightest attention to its primitive sense. In the use of the words "style" and "diction," he thus restricts us:—

> "Style is Greek for a sort of awl with which the ancients wrote on wax: diction is Latin for saying; these terms, therefore, differ as the English words penning, and wording. Style is applicable to written composition only; diction is also applicable to spoken eloquence. The style of Burke was superior to his unpremeditated diction; the parliamentary diction of Fox had more energy than his closet style."

Now we question whether these terms are thus confined by our best authors, nor do we think that there is sufficient ground for contracting the reasonable latitude with which they are generally used. Or, are we to insist that, because description is derived from *de* and *scribo*, to write, we cannot correctly be said to give an oral description of the scene we have lately visited? We think it indeed desirable that the etymon of every word should be known as far as possible, because it is *generally* one of the best clues to the existing varieties of meaning, which it often reconciles; and quite as much, because such knowledge can alone save language from progressive and needless deflexions. But still we must be fain to acquiesce in the long-continued usages of the best of our own English authorities, even where such use has led to a very considerable departure from the primitive sense. Because *sentio* originally signified the perception of the bodily senses, (though even the Latins themselves do not appear to have restricted it thus absolutely,) Mr. Taylor has insisted on a limitation to this sense in the case of its English derivative. Thus, page 135—

" APPROBATION—CONSENT—RATIFICATION.

" We approve a contract before we consent to it, and consent to it before we ratify it: to approve is an *assent* [observe the discrepancy here in Taylor's own use of a compound of *sentio*] of the judgment: to consent is an act of the bodily organs: to ratify, is formally to repeat consent."

In the case of the cognate word sentiment, he carries the same severity to a ridiculous extent. Page 286—

" SENTIMENT—OPINION.

" By means of our sensations, we feel; by means of our ideas, we think; now a sentiment, from *sentire*, is properly a judgment concerning sensations." [Here again is confusion, for, according to his own showing, he ought to have said, a judgment grounded upon, or in accordance with, our sensations.] " And an opinion, from *openari*, is a judgment concerning ideas; our sentiments appreciate external, and our opinions, internal phenomena. On questions of feeling, taste, observation, or report, we define our sentiments: on questions of science, argument, or metaphysical abstraction, we define our opinions. The sentiments of the heart, the opinions of the mind. It is my sentiment that the wine of Burgundy is the best in the world."

We believe that any one who hazarded this latter phrase in the company of educated men, would be called an affected puppy, or an intolerable pedant. We might attack other vulnerable points in the above-cited passages; we would only ask whether, strictly according to Mr. Taylor's uncompromising mode of procedure, *consentire* can be properly called an act of the bodily organs, or indeed an act at all. A further instance of want of system is, that some of the senses of words alleged are made good by instances forcible, and to the point, taken from good English authorities; sometimes very weak ones are adduced, proving little or nothing; sometimes the author makes his own illustrations; but, in many instances gives no illustration at all. If his object was to economize space—and one of his great merits is that he gives incidentally most valuable lessons in conciseness of expression—surely, in a work of this character, letter-press would have been more appropriately devoted to the introduction of good quotations proving his points, than to the assertion of his individual opinions on politics, religion, &c.; but a few outbreaks of this kind may be allowed amidst the generally dry labours of the lexicographer; and, when he takes these liberties, Taylor is cool and judicial in comparison with Johnson, who could not define Excise without abusing the Excisemen.

In one of his physical conclusions, we think, he is wrong. Thus, page 50:

" Courage is derived from *cor*, the heart, and denotes that warmth of temper, connected with a full and vigorous circulation, and with a firmness and command of the bodily organs, which disposes one animal to encounter another."

About the origin of the word, of course there is no doubt, but courage is very far from being mainly a matter of full, free, circulation. Indeed, we have often thought that Nature's principle of compensation is remarkably shown in this very case. That high sanguine temperament, which makes a man robust, impulsive, vehement, ardent for the gratification of his keen desires, would not only make him overbearing, but overwhelming, if he were not controlled by other circumstances connected with this temperament, namely, by that intense enjoyment of life which makes a man very loath to sacrifice it, together with an exquisite sensibility which makes him shrink from pain. The purple current in the veins of that renowned Spanish King and warrior Pedro the Trembler, is said to have been greatly disturbed whenever he was on the point of doing battle.

The same *adust complexion* has compelled
Charles to the convent, Philip to the field.

Michelet, in his History of France, tells us of the pale epileptic Cæsar, evidently indicating Napoleon. The starveling Tilly was a warrior no less bold than his stalwart opponent Gustavus. In many a case, has

The fiery spirit working out its way
Fretted the pigmy body to decay,
And o'erinformed the tenement of clay.

The very Cœur de Lion himself did not possess a more undaunted spirit than the meagre, philosophic Frederick of Prussia.

Occasionally the author is so far wrong in his etymologies as to excite distrust in the case of those words in tracing which we are unable to accompany him. Thus (p. 85), when distinguishing parson from clergyman, minister and priest, he says,—

"Parson is probably from *parochianus*, and implies one whose rights extend over a parish."

Now parson is neither more nor less than *persona ecclesiæ*, and by accounting for the origin of the word in any other way, an ignorance is shown not only of the real etymon, but of the ancient way of spelling the word in English, which serves as a guide to the derivation. Take again the following explanation of the words

"CONTRITION, REPENTANCE, REMORSE [p. 145].

"Sins demand contrition; vices, repentance; and crimes, remorse. Contrition is the feebler pain of mind, and regards the conscience. Repentance is a sharper feeling, which recurs oftener, and lasts longer, and is adapted to counteract, not an accidental lapse merely, but a bad habit. Remorse is the acute pang of the memory, and has for its object a vindictive self-punishment. Etymology exhibits contrition (*tristis*) as sad; repentance (*pœna*), as in pain; and remorse (*re* and *mordes*) as gnashing his teeth."

How any one professing to be an etymologist could have written such a passage is absolutely inconceivable. Contrition, which is not derived from *tristis*, but, as we thought every schoolboy knew, from *con* and *tritum* the supine of *tero*, so far from signifying a feeble pain, is, in the passage "a broken and contrite heart," the stronger term of the two, and implies a very grinding and comminution of the soul under the heavy sense of woe.

Again, in the case of remorse in this passage: though of course right in the etymon of the word, in his account of it he is evidently wrong: it has nothing to do with gnashing the teeth; such expressions as biting care, gnawing sorrow, are scattered profusely over the works of our earlier writers; but there is a line in Lucretius which is enough to show at once the true meaning of the word remorse:

"Præteritis admissa annis peccata *remordent*."

Where an etymology is very far-fetched there is all the more necessity for strong evidences of its truth. In accounting for the word "luck," (page 117,) Taylor says,—

> "The Scandinavian god Loki is a god of fortune, and therefore said to have been the cause of Balder's death, who was killed by an accident. From these indications it seems probable that the substantive luck must originally have meant the stake, the thing played for; next, the game, or critical point which determines success; and lastly, the unknown cause of casual event in general."

We are sorry to carry our readers into the cloudy region of Scandinavian mythology, which is dark enough of itself without being misrepresented, but it is the author's fault and not ours. According to the prose Edda, Balder's death, so far from being the result of accident, was occasioned by the most ingenious contrivance on the part of Loki. Balder is a special favourite in the Scandinavian Olympus; he bears a charmed life; all substances, with the exception of the misletoe, having taken an oath not to injure him. The gods, knowing him to be invulnerable, amuse themselves by making him the mark for their spears, maces, javelins, and other missiles, which strike him innocuously.

> "As soon as Loki heard of this he went away . . . . . . cut off the misletoe, and repaired to the place where the gods were assembled. There he found Hodur, standing apart, without partaking of the sports, on account of his blindness, and going up to him said, 'Why dost thou not also throw something at Balder?' 'Because I am blind,' answered Hodur, 'and see not where Balder is, and have, moreover, nothing to throw with.' 'Come, then, said Loki, do like the rest, and show honour to Balder by throwing this twig at him; I will direct thy arm toward the place where he stands. Hoder then took the miseltoe and, under the guidance of Loki, darted it at Balder, who, pierced through and through, fell down lifeless."

We do not find any authority for calling Loki a god of luck. He is represented as the impersonation of the evil principle, crafty, and full of artifices, perpetually lying and calumniating, but beautiful in person, and a god.

The word "new," we are told, "is etymologically connected with *nitere* to glisten; *nitidus*, shining, looking bright." These three words *are* etymologically connected: the Anglo-Saxon *neow*, the digammated Greek *νεὸς*, and the Latin *novus*. Mr. Taylor might have taken any one of these words as the root, and no objection could have been offered. New is certainly not derived from *niteo*, nor can we, without the greatest violence, establish a connection between this verb and either the Greek or Latin word cited above.

"RISK, PERIL, DANGER."

"A risk is a doubtful, a peril is an imminent, a danger is an important, contingent evil."

Here the etymon of "peril" is forgotten, or else it is thrown aside, and the standard of meaning is taken from what is, or is supposed to be, the common usage of the word, as there is certainly no ground for introducing the idea of imminence as distinguishing "peril" from danger. Peril comes from *periculum*, and that from an obsolete Latin verb *perio*, whence *experior*, to try. *Periculum* itself seems in the first instance to have meant nothing more than a "trial," as in the common Latin idiom "*facere periculum*," a form which we find curiously imitated in one of Beaumont and Fletcher's plays.

> "Thank your Lordship!
> If there be e'er a private corner as you go, sir,
> A foolish lobby out o' the way, *make danger*,
> Try what they are, try." *Loyal Subject*, sc. iv. act 3.

Where a marked deviation from the radical word has been made at a very early period, some notice should have been taken of it.

"ARBOUR, BOWER [p. 116].

"From *herberg*, a haven or harbour, comes arbour; and from *bough*, a branch, comes *boughery* or bower; a nook which shelters is an arbour; *a nook formed of branches is a bower, an arbour of rock-work, a bower of faggots.*"

What would Taylor have said to the following lines from Sydney's "Arcadia,"—

> "What marvaile though a prince transform himself to a pastor?
> Come from *marble bowres*, many times the gay *harbour* of anguish,
> Unto a silly cabin, though weak yet stronger against woes." Book I.

When Spenser, in his "Prothalamion," speaks of

> "Those bricky towers,
> The which on Themmes brode aged backe doe ryde,
> Where now the studious lawyers have their *bowres*;

he certainly does not mean to insinuate that the Jurists of his day pursued their thorny and tangled task under roses and jasmine in the Temple Gardens. The word is so frequently used for a chamber, especially the ladies' chamber in a large building, that it ought not to have been dismissed so summarily.

Where a word is of very rare occurrence, if not quite obsolete, an authority ought to be given; as in the case of the verb plane. "The sea-mew planes along the wave"—a motion expressed by Milton in the words, "and shaves with level wing the deep." We never met with the word plane, and we should have been glad to have found the usage proved by a quotation.

Having asserted very properly that vanity means emptiness, and shown, that the "vanity," coupled in Ecclesiastes with "vexation of spirit," implies the tedium arising from emptiness of mind, he adds, "the old writers apply the word more defensibly than the moderns," and quotes,—

> "Here I may well show the *vanity* of that which is reported in the story of Walsingham."—*Sir J. Davies.*
>
> "The ground-work thereof is true, however they, through *vanity*, do thereupon build many forged histories of their own antiquity."—*Spenser.*

"In these passages," he proceeds, "vanity is, I think, not used for vain-gloriousness, but for emptiness of fact, absence of information, lack of truth." The misuse of the word began early, and is authorized by our best writers. Shakespeare writes, "I must bestow upon the eyes of this young couple some vanity of my art."

There need not have been a moment's question that vanity implied deficiency of principle, untruth, dishonesty. The word *vanus* is often used by the Latins in these senses; and of this Shakespeare seems to have been fully aware, as Mr. Taylor might have found by turning from the "Tempest" to the "Comedy of Errors," where we find the lines,

"'Tis holy sport to be a little *vain* (deceitful),
Where the sweet breath of flattery conquers strife."

Had he looked from Ecclesiastes to the 13th Chapter of Proverbs, he would have discovered a still more forcible instance—

> "Wealth gotten by *vanity* shall be diminished, but he that gathereth by labour shall increase."

Such expressions and words as to "incur an acquaintance," page 135; "a well-edified result," page 253; "to faulter into barbarism," page 265; "savagism," 210; "indiscipline," 268; "downfully," appear, to say the least, very questionable.

We have altogether abstained from examining the Articles in the "Quarterly Review," in three of which "the synonyms" appear to have been favourably mentioned. From these repeated notices we may, perhaps, infer that the articles in question emanated from the pen of Southey, Taylor's friend; we are far however from denying that the praise is well merited. The better the work, however, the more imperative it is to point out its various defects.

We still want a concise and perspicuous dictionary of the more remarkable words in the English language, giving, in every instance, the etymon, if ascertainable, with the main deflexions from the original sense, and a good brief quotation in proof. Words thoroughly obsolete might be omitted, except when required as mediate links proving the derivation; nor would it be necessary to hamper the work with the solitary and foolish Latinisms of such a writer as Feltham, or to account for the wilful eccentricities in the diction of Carlyle and Keats. For all practical purposes, it would be sufficient in such a work to divide the literature of England into two, or, at the utmost, three periods. To execute a work like this properly would require no ordinary amount of learning, recollection, and judgment. No such work, that we are aware of, is in contemplation, and, till something of the kind appears, we heartily wish the reprint of Mr. Taylor's valuable work the success which it justly deserves.

ON THE COMPOSITION AND RESOLUTION OF FORCES.

The old method of commencing the study of mechanics with the properties of the lever, and deducing thence the mathematical expression for the conditions of equilibrium of three forces acting at a point, is one which, whatever claims it may possess from the antiquity of the practice, is at least an unphilosophical introduction to physical science. Indeed, in modern works on mechanics, some independent proof of this fundamental law is generally given. To these, however, there certainly are many objections: Duchayla's proof, depending on the principle that force produces the same effect in whatever point of its direction it is supposed to act, involves the consideration of a system of rigidly connected points, as much as that derived from the properties of the lever; whilst others are not sufficiently elementary for beginners, or are manifestly defective.

The following investigation of the laws of the composition and resolution of forces acting at a point is capable of being understood by all who are acquainted with the elements of trigonometry, and completely solves the problem by a simple and direct method. It must be premised that the elementary physical principles, which are involved in this as in every other mode of proof, and which ought to be made intelligible to learners by numerous illustrations, are here but briefly stated, the object being only to suggest a method of proving this fundamental proposition of mechanics not liable to the objections to which others are open. Nor is it necessary here to enter upon the question, whether these elementary principles of physical science are necessary truths which the mind is incapable of rejecting when they are fully explained, or whether they are only established by experience. It is sufficient that by the mind which clearly understands them they are admitted without hesitation, whilst all the results derivable from them are strictly verified by observation.

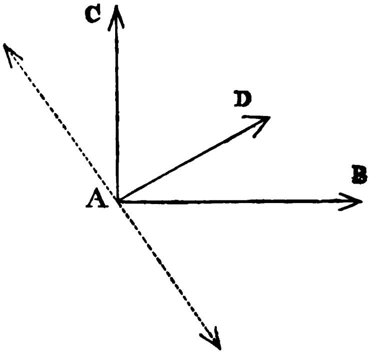
The postulates necessary to enable us to investigate this question are the following:—

1. That when two forces are acting at a point, their combined effect is the same as that of a single force, the magnitude and direction of which depend upon those of the two forces, and which is in all respects their equivalent; and conversely, that this single force may be supposed to be resolved into the two forces of which it is compounded.

2. That the effect of forces is not altered by their acting together, but that two equal forces in the same direction produce double the effect of one, &c.

Hence it follows that if the resultant force of P and Q be R, that of 2 P and 2 Q will be 2 R, &c.; and its direction will be unaltered; or conversely, if the force R be resolved into P and Q, the resolved parts of 2 R will be 2 P and 2 Q in those directions, of 3 R, 3 P, and 3 Q, &c.

3. That a force has no effect to produce or retard motion in a direction perpendicular to that in which it is acting.



Let us now consider the case of two forces acting at a point A in the directions A B, A C at right angles to one another, and let A D be the direction of the equivalent resultant force. And let P, Q represent the magnitudes of the two forces (measured by the weight they would sustain), R that of the resultant force, and let D A B = A, and therefore D A C = 90° − A. Then R in the direction A D may be resolved into the two forces P and Q, in direction A B and A C respectively, and by the third postulate, P will be the whole effective force of R towards A B, and Q towards A C.

Again, by the second postulate, the ratios $\frac{P}{R}$ and $\frac{Q}{R}$ remain the same, if the respective directions are unaltered. Let now P and Q be each resolved into two forces, one in the direction of R, and the other perpendicular to it; the sum of the resolved parts in the direction A D will be their combined effect in that direction, that is, must be equal to R. And since the angles are the same in both cases, the resolved part of P in direction A D must bear the same ratio to P, that P bears to R, and therefore $= \frac{P^2}{R}$: and similarly the resolved part of Q in that direction $= \frac{Q^2}{R}$. We have therefore $R = \frac{P^2}{R} + \frac{Q^2}{R}$, or $R^2 = P^2 + Q^2$, an equation which determines the *magnitude* of the resultant of two forces acting at right angles to one another.

But as this relation is the same for all values of A, it does not enable us to determine the *direction* of R, if P and Q are given, or the magnitude of P and Q for different values of A when R is given. To discover this, we must observe that $\frac{P}{R}$ and $\frac{Q}{R}$ are constant for the same values of A, and vary only when A varies; they are therefore, in mathematical language, some function of A. This function must be the mathematical expression of the law of variation, that is, of the physical principles of the problem, which have been stated in our three postulates.

The question to be determined is, what is this law of variation? Does the ratio of P to R vary as the sine or co-sine of A, or as any power or combination of these; or does it follow the law of some more complicated expression, as the logarithm of some trigonometrical function?

To solve this, let us express the ratio $\frac{P}{R}$ by F (A), the meaning of

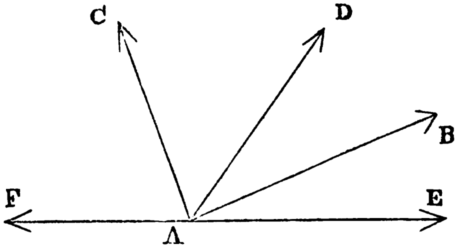
F (A) being some unknown function of this angle A, the *form* of which must be the same for all angles, since the physical principles which are to be satisfied by it remain the same; and let the ratio $\frac{Q}{R}$ = f (A), which is evidently the same function of 90° − A that F (A) is of A.

Now from the relation between P, Q and R determined above, we have, dividing by R^2, $\frac{P^2}{R^2} + \frac{Q^2}{R^2} = 1$, or substituting these values for the ratios we have

$$\overline{F(A)|}^2 + \overline{f(A)|}^2 = 1 \ . \ . \ . \ . \ (1).$$

This equation however is not in itself sufficient to determine these functions, and for this purpose we must express in mathematical language some other physical principles contained in the postulates. We may observe then that since R is the equivalent of P and Q, its effect in any direction (as well as in its own) must be equal to the combined effects of P and Q in that direction.

Let A E be another direction inclined at an angle B A E or B, to A B: the angle which E A produced makes with A C is evidently 90° − B, and D A E = A + B.



Then, if we suppose P, Q and R each to be resolved into two component parts, one in this direction and the other at right angles to it, we should have (observing that the effect of Q must be to diminish the effect of P in direction A E since E A C is greater than a right angle), and representing by F (A + B), F (B), &c., the same functions of D A E and B A E, that F (A) is of D A B,—

$$R \times F(A + B) = P \times F(B) - Q \times f(B)$$

or substituting for $\frac{P}{R}$ and $\frac{Q}{R}$

$$F(A + B) = F(A) \times F(B) - f(A) \times f(B) \ . \ . \ . \ (2).\ ^*$$

But it is evident on comparing equations (1) and (2) with the fundamental trigonometrical expressions $\cos.^2 A + \sin.^2 A = 1$, and $\cos. (A+B) = \cos. A. \cos. B - \sin. A. \sin. B$, that they would be satisfied by making F (A) equal to cos. A, and f (A) to sin. A. And these are the only functions of A that will satisfy them, because by the aid of these two equations (1) and (2), actual values of F (A) and f (A),

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[*] In like manner taking the resolved parts perpendicular to A E, we have,

$$f(A + B) = F(A)\, f(B) + F(B)\, f(A).$$

might be found for any given values of the angle A,* which must be the same as are determined for the cosine and sine of that angle by the aid of the trigonometrical relations. In fact, the equations which express mathematically the physical law are identical with those from which all the properties of these trigonometrical functions are, or at least might be, deduced. F (A) and f (A) must therefore be respectively equal to the sine and cosine of A.

We have therefore $P = R \times \cos. A$, $Q = R \times \sin. A$, which equations express the effect of a force R in a direction inclined at an angle A to it, and in a direction perpendicular to this. From these the resultant of two forces inclined at any angle may be easily found, by observing that their combined effect in the direction of the resultant must be equal to it, and those at right angles to the resultant must be equal and opposite; which considerations give us at once the relation known as the parallelogram of forces.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 75.—*Proposed by Mr. J. Stanwick, Gilling School.*

WHAT is the greatest area that "Gunter's Chain" can circumscribe?

Answered by Mr. Sothern, Mr. Levy, K. B., Mr. S. Dyer, and the Proposer.

Here the greatest area circumscribed by the chain will be a regular polygon, of 100 sides, the length of each being one link or ·22 yds.,

$$\therefore \text{area} = \tfrac{1}{4} \times 100 \times {\cdot}22^2 \times \cot. \tfrac{180}{100}^\circ = 38{\cdot}511 \text{ yds.}$$

QUES. 76.—*Proposed by Nemo.*

$$\text{Given } \left\{ \begin{array}{l} \sin. \theta = a \sin. \phi \\ \tan. \theta = b \tan. \phi \end{array} \right\} \text{ to find } \theta \text{ and } \phi.$$

Answered by Mr. Hill, Mr. Moffitt, F. W. B., and Mr. Barnacle.

Dividing the first equation by the second,

$$\frac{\sin. \theta}{\tan. \theta} = \frac{a \,.\, \sin. \phi}{b \,.\, \tan. \phi},$$

$$\therefore \cos. \theta = \frac{a}{b} \,.\, \cos. \phi,$$

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* For instance, when $A = 45° = 90° - A$, we must have $F(45°) = \frac{1}{\sqrt{2}}$ from (1).

And from (2) we should have (making the substitutions as in Trigonometry)

$$F\left(\frac{A}{2}\right) = \frac{\sqrt{1 + F(A)}}{2}$$

Therefore by continual bisections, and the aid of (2), we could find approximate numerical values for all the angles.

$$\therefore \cos.^2 \theta = \frac{a^2}{b^2} \cdot \cos.^2 \phi \ldots (3).$$

Squaring the first equation,

$$\sin.^2 \theta = a^2 \sin.^2 \phi \ldots (4).$$

Adding (3) and (4),

$$a^2 \sin.^2 \phi + \frac{a^2}{b^2} \cos.^2 \phi = 1,$$

$$\therefore a^2 \sin.^2 \phi + \frac{a^2}{b^2} (1 - \sin.^2 \phi) = 1,$$

$$\therefore \sin. \phi = \frac{1}{a} \sqrt{\frac{b^2 - a^2}{b^2 - 1}},$$

$$\text{And } \sin. \theta = a \sin. \phi = \sqrt{\frac{b^2 - a^2}{b^2 - 1}},$$

QUES. 77.—*Proposed by Mr. O'Clazey, Durham.*

A clock upon the surface of the earth beats true time; but when carried to the top of a high mountain, loses 2 minutes every day; required the height of the mountain, the diameter of the earth being 8000 miles.

Answered by the Proposer, Mr. Salter, L. C., and Mr. Richardson.

Let g be the force of gravity, and t the time of one vibration of the pendulum at the earth's surface; g' the force of gravity, and t' the time of one vibration at the top of the mountain; r the radius of the earth, and h the height of the mountain; then as the length of the pendulum is the same at both places, we have

$$g : g' :: t'^2 : t^2,$$
$$\text{but } g' : g :: r^2 : (r + h)^2,$$
$$\therefore t^2 (r + h)^2 = t'^2 r^2,$$
$$\therefore t (r + h) = t' r,$$
$$\therefore h = r \left(\frac{t'}{t} - 1 \right);$$

$$\text{but by the question, } 1440t = 1438t', \text{ and } \frac{t'}{t} = \frac{1440}{1438},$$

Therefore by substitution,

$$h = r \left(\frac{1440}{1438} - 1 \right) = \frac{2r}{1438} = \frac{4000}{719} = 5{\cdot}56328 \text{ miles.}$$

LIST OF MATHEMATICAL ANSWERS.

G. Barnacle, Empingham, ans. 75, 76; J. Dungate, Ightham, ans. 75; G. Baty, Greystoke, ans. 75; F. W. B., Pembroke Dock, ans. 75, 76; J. O'Clazey, Durham, ans. 75, 76, 77; W. L. Brown, Ightham, ans. 75; W. Stephens, Sethney, ans. 75, 76, 77; J. Moffitt, Durham, ans. 75, 76, 77; H. Hill, Chester, ans. 75, 76, 77; J. Salter, Durham, ans. 75, 76, 77; L. C. ans. 75, 76, 77; T. Sothern, Burtonwood, ans. 75, 77; W. H. Levy, Shelbourne, ans. 75, 76, 77; J. B. B., Pembroke Dock, ans. 75, 76; Fern, ans. 75, 77; J. Hewitt, Cambridge, ans. 75, 76; T. Hirst, ans. 76; J. Hartland, ans. 76; K. B., ans. 76, 77; J. Richardson, Newcastle, 76, 77.

NEW QUESTIONS,

To be answered in our Number for November, 1850.

Ques. 78.—*Proposed by Nemo.*

To what height may water be raised by the condensation of steam, at a place where the mercury in the barometer stands at 24 inches, allowing the vapour of the water in the receiver to have a pressure of 3 lbs. per square inch.

Ques. 79.—*Proposed by Mr. O'Clazey, Durham.*

In a square, whose side is 4, a circle is inscribed touching the four sides, and in each of the angles thus formed, a circle is inscribed touching the former circle and the two adjacent sides of the square. Required the area of the smaller circles.

Ques. 80.—*Proposed by Tom Tomkins.*

At a place within the tropics, it was observed that the shadow of a stick, at noon on the 21st of December, was double the length of the shadow of the same stick, at noon on the 21st of June. Required the latitude of the place of observation.

PUPIL TEACHERS AND QUEEN'S SCHOLARSHIPS.

The following is a copy of a letter to her Majesty's Inspectors of Schools on Queen's Scholarships, from the Committee of Council on Education:—

Sir—I am directed to request your attention to the subject of pupil teachers who have completed their apprenticeship, and to the subject of Queen's scholarships.

I beg leave to refer you to the passages marked at pages 3* and 5† in the enclosed copy of their lordships' minutes for 1846. The first of these passages, that at page 3, relates to the completion of the apprenticeship, and applies to all those pupil teachers who successfully pass the examination, and produce the certificates required at the end of the fifth year. You will examine pupil teachers on the completion of their apprenticeships, pursuant to the appropriate forms, which you will fill up and return precisely as in the case of pupil teachers completing any of the preceding years of their service. If the report and papers thus transmitted be found to be satisfactory, my lords will, at the time of forwarding post-office orders for payment of the year's stipend, communicate their readiness to certify, when called upon, that the pupil teacher has successfully completed his apprenticeship pursuant to these minutes. They think this preferable to issuing certificates to the pupil teachers themselves.

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* Every pupil teacher who has passed all the foregoing examinations, and has presented the required testimonials in each year, will be entitled to a certificate declaring that he has successfully completed his apprenticeship.

† The Committee of Council on Education had under their consideration their lordships' minutes as to the apprenticeship of pupil teachers in elementary schools. It appeared further expedient to their lordships, that the Lord President should authorize one or more of her Majesty's inspectors, together with the principal of a normal school under inspection, to submit to his lordship, from among the pupil teachers who had successfully terminated their apprenticeship, a certain number of those who, upon competition in a public examination, to be annually held by such inspectors and principal in each inspector's district, might be found most proficient in their studies and skilful in the art of teaching, and concerning whose character and zeal for the office of teachers the inspector of the district could give the most favourable report. That the Committee of Council on Education, on comparison of the testimonials and examination papers of these apprentices, should award, for

I have now to explain to you the views of the Committee in relation to Queen's scholarships. The class qualified to compete for these scholarships will consist of the apprentices who have passed the examination for the end of the fifth year successfully. The conditions prescribed at page 5 of the enclosed minutes for the examination of such competitors, are fulfilled in the annual examination held shortly before Christmas at each training school. My lords propose that the pupil teachers who have successfully completed their apprenticeship shall be at liberty to attend at any of these examinations which their friends or patrons may select, with the concurrence of the principal of the training school. Their lordships will also be prepared to allow pupil teachers, who have passed the fourth year's examination with unequivocal success, before Michaelmas in each year, to compete for Queen's scholarships. If they succeed, they will receive a proportionate payment for the unexpired portion of the current year of their apprenticeship, at the rate of the fifth year, up to the time when their scholarship commences. If they fail, they will return to their schools, and will have to pass the examination for the end of the fifth year in the usual manner. They must, of course, obtain the consent of the several parties to their subsisting indentures.

The enclosed tables contain the names of all those schools in your district in which pupil teachers will have completed the fourth year of their apprenticeship before Michaelmas next, and the fifth year before Christmas.

The friends or patrons should make it an indispensable condition that the principal should arrange to board the candidates during the time of their examination in the training college, and to keep them under the same discipline as the students.

Their lordships will request each principal of a training school to furnish them with a list of the apprentices whom he may have agreed to present as candidates for Queen's scholarships in his institution, at least ten days before the date of the examination. But on the selection of one training school under inspection, rather than another, my lords must wholly decline to offer any advice, suggestion, or opinion whatever to the friends and patrons of apprentices; and their lordships must also decline to conduct any part of the correspondence requisite to ascertain the consent of the principal to receive any particular candidate. This must be done by the friends and patrons themselves, bearing in mind the time at which the examination will occur, and the notice to be given by the principal to the Committee of Council after the conclusion of the correspondence.

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as many as they might think fit, an exhibition of 20*l.* or 25*l.* to one of the normal schools under the inspection of her Majesty's inspectors. That the pupil teacher to whom such exhibition should be awarded, should be thenceforth denominated, "Queen's scholar." That the exhibition should be liable to be withdrawn if the principal of the training school should be dissatisfied with the conduct, attainments or skill of "Queen's scholar."

In order to limit as little as possible the opportunities by which peculiar talents may be exhibited, it is not perhaps desirable to prescribe which of the subjects of examination these candidates shall be at liberty to select, further than to state strongly their lordships' opinion that they should not attempt answers upon all the subjects.

The following subjects must not be wholly omitted by any candidate; viz. —1. The Holy Scriptures, the Catechism, and the Liturgy of the Church of England (in schools connected with the Church of England). 2. English history. 3. Geography. 4. Arithmetic (including vulgar fractions and decimals). 5. English grammar and composition. 6. The notes of a lesson or some observations on the practical duties of a teacher.

A candidate who answers in these subjects really well, may obtain an exhibition of 20*l.* for one year. A candidate who answers in the foregoing subjects really well, and also in one other subject really well (to be selected by himself out of those proposed to the candidates for certificates of merit, but with a preference on the part of my lords for the first three books of Euclid) may obtain an exhibition of 25*l.* for one year. If a candidate attempts a greater number of subjects, he will do so on his own responsibility. My lords could but be happy to find that he was able to answer in a greater number of subjects well, but the extent of the subjects attempted will not be accepted in lieu of mastery over those which are indispensable.

Candidates for Queen's scholarships in female training schools will not be required to answer questions in vulgar fractions or decimals. For the higher exhibitions, they will be at liberty to select one of the subjects proposed to female candidates for certificates of merit, such as book-keeping, biographical memoirs, or domestic economy. Their lordships will prefer a knowledge of some good manual upon the last-named subject, in connection with which they will be prepared to give due weight to certificates from the managers of the candidate's school, attesting her practical knowledge of household duties.

The exhibitions awarded to females will be at the rate of two-thirds of those awarded to males; viz., 13*l.* 6*s.* 8*d.* and 16*l.* 13*s.* 4*d.*, instead of 20*l.* and 25*l.*, to correspond with the different expense of boarding in training schools, for males and females respectively. Every candidate will further be required to instruct a class in the presence of the inspector, to read intelligently, with good articulation and pronunciation; to write a fair hand; and to spell correctly. The exhibitions will be paid quarterly to the principal of the training school, on the receipt of a certificate that he has been satisfied with the exhibitioner's conduct and progress during the preceding quarter, and the exhibitioner will receive credit for the amount in the payment due from him for his board, residence, and instruction in the school.

You will be careful to bring this information under the notice of the managers of schools within your district, and particularly at the time of holding examinations for the fourth and fifth years of apprenticeship, in order that the subject may become thoroughly known to the persons interested. It will be necessary to be very cautious in offering advice, whether or not particular apprentices should be presented as candidates for Queen's scholarships, since, if apprentices whom her Majesty's inspectors advise to compete afterwards happen to be unsuccessful, or if others whom they may have dissuaded are afterwards judged to be equal to some of the successful competitors, there is no doubt but that much dissatisfaction will be created. No advice, therefore, should be given, unless it be asked for, and, when given, it should be accompanied by an express caution as to the responsibility of those who rely upon it.

The standard of examination fixed for the Queen's scholarships will nowise interfere with the course of instruction prescribed in current apprenticeships. No additional subject is required beyond those which the candidate will have already studied as an apprentice. It must be the candidate's endeavour to raise the quality of his knowledge during any interval that he may have for preparation. My lords will not grant any exhibitions of this nature to candidates whose attainments are not indisputably good, sound, and solid, as far as they go. As to the number of these scholarships to be allowed, their lordships will confine it within twenty-five per cent. of the number of students who shall have been resident in each training school for one year and upwards at the date of the examination.

Their lordships reserve to themselves the liberty of reconsidering the number of these scholarships when they shall have before them the results of further experience.—I have, &c. (Signed) R. R. W. LINGEN.

H. M. Inspector of Schools.

FAREWELL DEJEUNER TO THE BISHOP-DESIGNATE OF LYTTELTON.

ARRANGEMENTS having been made for the departure from England of the Rev. Thomas Jackson, the Bishop-Designate of Lyttelton, in the new Canterbury settlement, a farewell *déjeûner* was given to him on Tuesday, the 10th September, by the students of Battersea College, of which institution the rev. gentleman has been during the last six years and a half the principal. The *déjeûner* was to have taken place in the college grounds, but as the number of guests was much larger than the students anticipated, marquees were erected by Mr. B. Edgington on the grounds of H. Fownes, Esq., contiguous to Christ Church, and to that spot the company repaired.

It was announced that Lord Ashley, M.P., would preside. So confident were the students that they would have the honour of his lordship's company that they waited three hours for him, and the *déjeûner*, which was to have taken place at one o'clock, did not commence until after four. At the unanimous request of the students,

The Rev. C. B. DALTON, M.A., Rector of Lambeth, took the chair. After the *déjeûner* the rev. gentleman proposed "Church and Queen," a toast which was warmly responded to by the assembled guests.

The Rev. CHAIRMAN then said he had been requested by the students to introduce to the meeting Mr. Tate, who had been for a long period the mathematical professor of the Battersea College, and also to explain that the testimonial which was about to be presented to Mr. Jackson had been prepared by the present and past students of the institution. He (the rev. chairman) could hardly discharge the duties which had been imposed upon him that day without saying one or two words relative to his excellent friend who was about leaving them for a distant part of the world. He was anxious to make such remarks, not merely because he happened to be a clergyman of the district, and had seen his work and labour of love generally, nor because as in his capacity as rector of a large parish he had one master from Battersea regularly employed in his schools, and two or three occasionally, by whose exertions and talents the educational wants of his district were very materially relieved, but because the rev. principal was one whose affection he had enjoyed for many years past. The first time he ever met Mr. Jackson was one evening, when the rev. gentleman, soon after he was ordained, called upon him, and both feeling an interest in education, and in the progress of the Church of England, their meetings were frequent, and their conversations often prolonged until two or three o'clock in the morning. Afterwards he recollected Mr. Jackson as curate of Brompton, where he was greatly admired for the soundness of his teaching, and much beloved by the poor for the efforts he made to extend education among them. The Bishop of London selected Mr. Jackson out of all the London clergy as the man to whom he could most readily confide the education of his son. Well did he (the chairman) know how great interest was felt in Mr. Jackson by the bishop's family, and by no one greater interest than the Bishop of London himself. So highly did the bishop think of Mr. Jackson's ability and zeal as a clergyman, that he appointed him to the incumbency of a church in the east of London, where the most earnest devotion to ministerial work was required. The bishop's choice was a wise one, for never did a greater change take place in any parish than that which was observed in the district of Mile-end under Mr. Jackson's incumbency. Not only were the ordinances of the Church more devoutly and respectfully observed, and sound instruction conveyed to the people, but the order of the neighbourhood was secured and preserved. He (the chairman) called upon Mr. Jackson, at his small parsonage at Mile-end, at which time he was surrounded on all sides by his schools in full operation, and spoke of the noise which must be perpetually sounding in his ears; to which Mr. Jackson replied, "Why, what noise does a miller love so much as the sound of his own mill?" When Mr. Jackson had shown so much zeal in religion and education, could they be surprised that when a principal was wanted for Battersea College—more especially under the circumstances in which it became vacant—the Bishop of London thought Mr. Jackson was the best man that could be sent there? If unwearied zeal, entire devotedness to his work, and a wonderful versatility of talent, could make a man a good bishop, the new settlement of Canterbury would have one of the best bishops ever consecrated.

Mr. TATE, the Mathematical Master of the College, presented a testimonial to Mr. Jackson. It was a magnificent silver centre piece, bearing appropriate inscriptions. Mr. Tate spoke in the highest terms of praise of Mr. Jackson, and his remarks were frequently interrupted by loud expressions of applause on the part of the students.

The BISHOP-DESIGNATE, in returning thanks, said he should, indeed, be wanting in Christian feeling and affectionate gratitude if he did not most sensibly feel the kind sentiments which had been expressed towards him that day. He thought the gentlemen had sketched an ideal character, such as he ought to have been, but had not really proved. He assured the students and masters of Battersea College that however distant they might hereafter find themselves—he preaching the Gospel in the Antipodes, and they teaching schools in Old England,—he should ever remember with gratitude and affection the events of that most interesting day. The present which they had been so kind as to give him should ever grace the centre of his table in his distant home as long as he lived a Christian bishop, and he trusted that when he was gathered to his fathers, he should hand it down as a precious legacy to his eldest child. He felt it was but right that he should address a parting word to the students of the College—to those who had borne with his many eccentricities and shortcomings. He felt bound to express towards them his thankfulness and his affection. He had no words—no exact words—to express that affection—so he would rather say nothing about it. He would pray for them most earnestly when removed to his antipodal home; and when he called to mind, individually, many of those he left behind, he hoped the remembrance of them would brace him to still more sustained exertion in the great cause of education. Many of those who had been trained at Battersea had been called to their eternal rest; might those now before him be followers of them, who, having laboured in patience and faith here, were now inheritors of the promises of God. By the moderation of their opinions on the subjects which, unhappily, divided the Church at the present time, by their personal piety and by undeviating rectitude of character, he trusted they would prove to the world the reality of their training, and their usefulness to the Church at large. He could assure the students that the system so long acted upon in Battersea would be reproduced in New Zealand. On Saturday last he bade adieu to the first band of colonists at Plymouth, and the last thing he left them doing was, unpacking the excellent mathematical and arithmetical works of Mr. Tate, twenty-four copies of each of whose works had been sent with each ship, along with other educational books. He was delighted to find there was not a part of the habitable globe in which Battersea men were not at work. One was labouring at Moscow, another was pursuing his mission at Codrington College, Barbadoes, while others were found at the distant points of Quebec and Sydney. If the students acted up to the instruction given to them he felt convinced that the living power of Battersea would survive, whatever might become of its outward walls.

Mr. **Cazenove**, one of the Council of Battersea College, proposed the health of Mr. Jackson, the Bishop-Designate, and the Rev. H. **Moseley**, her Majesty's Inspector of Schools, spoke in its support.

The **Bishop-Designate** briefly returned thanks.

During the afternoon a very beautiful four-part song, entitled "The Canterbury Pilgrims," was sung by the students. The words are by Martin Farquhar Tupper, D.C.L., of the University of Oxford, and the music by Mr. George Martin, one of the deputies of her majesty's chapels royal, resident music-master of Battersea College, and organist of Christ Church, Battersea. At the request of many influential friends of the settlement the song is published, and the profits arising from the sale are to be devoted towards the purchase of an organ for Christ Church College, at Lyttelton.

A vote of thanks to the Rev. Charles B. Dalton, for his courtesy in presiding, closed the day's proceedings, which were throughout of a most interesting character.

Intelligence.

University Commissioners.—The Queen has been pleased to appoint—The Right Rev. the Lord Bishop of Norwich; the Very Rev. Archibald Campbell Tait, D.C.L., Dean of Carlisle; the Rev. Francis Jeune, D.C.L., Master of Pembroke College, in the University of Oxford; The Rev. Henry George Liddell, M.A., Head Master of St. Peter's College, Westminster; John Lucius Dampier, Esq., M.A., Vice-Warden of the Stanneries of Cornwall; the Rev. Baden Powell, M.A., Savilian Professor of Geometry in the University of Oxford; and the Rev. George Henry Sachaverell Johnson, M.A., of Queen's College, in the University of Oxford, to be Her Majesty's Commissioners for inquiring into the state, discipline, studies, and revenues of the University and Colleges of Oxford.

The Queen has also been pleased to appoint—The Right Rev. the Lord Bishop of Chester; the Very Rev. George Peacock, D.D., Dean of Ely; Sir John Frederick William Herschell, Bart.; Sir John Romilly, Kt., her Majesty's Attorney-General; and the Rev. Adam Sedgwick, M.A., Woodwardian Professor of Geology in the University of Cambridge, to be Her Majesty's Commissioners for inquiring into the state, discipline, studies, and revenues of the University and Colleges of Cambridge.

King's College, London.—*Theological Department.*—The council of this university have given notice that the Theological Department will open on Friday, the 4th of October.

The following persons will be admitted students of this department:—

1. All students of King's College, London, who, having passed three years in the department of general literature and science, shall thereupon have received the diploma of an associate, in consideration of good conduct and industry. This term of three years is reduced to two years in the case of those who have spent two years preceding their entrance

into the college, either at King's College School, or at one of the schools in union.

2. All graduates of the Universities of Oxford, Cambridge, and Durham.

3. All persons of the age of twenty-one, who, having been examined and reported as eligible by the principal, shall obtain the recommendation of a bishop. The necessary qualifications are the four Gospels, in Greek; a knowledge of the Historical Scriptures, in English; an acquaintance with Bishop Nicholson's Exposition of the Church Catechism (Society for Promoting Christian Knowledge); a grammatical knowledge of some one Greek, and some one Latin classical book, which may be selected by the candidate himself; and the power of translating from English into Latin. An acquaintance with the elements of Hebrew is also desirable. The examination lasts two days. The choice of books to be brought up must be made from the following list: *i. e.*, Homer, books 1, 2, and 3; one Greek tragedy; Herodotus, book 2, or any two other books; Thucydides; Xenophon's Cyropædia, books 1, 2, and 3, or his Anabasis, books 1, 2, and 3; Cicero's de Officiis, de Naturâ Deorum, de Finibus; Cæsari de Bello Gallico, three books; Sallust; Livy, two books; Tacitus, de Moribus Germanorum, and Agricola; Virgil, three books of the Æneid, or the Georgics; Horace's Odes, Satires, or Epistles.

Associates of King's College, London, and graduates of Oxford, Cambridge, or Durham, will be admitted on producing testimonials from their respective colleges; and all other candidates must send to the principal, fourteen days previous to the examination, a written application for admission, accompanied by a certificate of good moral and religious character from the clergyman of their parish, or of the parish in which they have last resided. The form of application may be obtained from the Secretary of King's College.

Previously to matriculation each student must subscribe the Thirty-nine Articles of Religion, as well as a declaration that he will conform to all the rules and regulations of the college.

All students are expected to attend the chapel service morning and evening daily; and in rotation to give their services as teachers in the evening school for the indigent, which has been established in the parish of St. Martin-in-the-Fields, in connection with King's College.

Persons already in deacon's orders, desirous of preparing themselves as candidates for priest's orders, as well as graduates of Oxford, Cambridge, and Durham, are permitted to attend the theological course for such length of time as they may desire; but, in the case of all students, the course of study must be continued during at least six academical terms (two years). At the close of this period a strict examination takes place; and to all students who have merited such a distinction by their attainments, and by their good character during the period of their studies in King's College, the principal is empowered by the council to grant a certificate of attainments, which may be exhibited for the satisfaction of the bishop to whom any student may apply to be admitted as a candidate for holy orders.

BATTERSEA COLLEGE.—The General Committee of the National Society held its last meeting prior to the usual vacation on the 7th of August last, when a resolution of the Battersea Council of the 30th July was read, stating that they regretted that, in consequence of an unfavourable reply to their application to the Committee of Council on Education for an annual grant, they could not resume the charge of the institution, which they resigned to the Society on the 11th of June. A letter was then read from the Rev. T. Jackson, resigning his situation as Principal of the Training College, Battersea, in consequence of his appointment to the bishopric of Lyttelton, in the settlement of Canterbury, New Zealand, when the following resolutions were thereupon agreed to:—

"The Committee, in receiving the resignation of the Rev. T. Jackson, desire to record their sense of the zeal and talent with which he has conducted the institution at Battersea for six years and a half, and to express their earnest hope that in his new sphere of duty he will be enabled to carry out the principles of the National Society.

"That, as a temporary arrangement, the Rev. John Hunter, the Vice-Principal, be requested to conduct the institution at Battersea, without making any change in his own position, and that he be authorized to engage an assistant until Christmas.

"That the Vice-Principal be requested to admit no fresh students, without informing them that the Society reserves to itself the right to discontinue the institution at such time after Christmas as may be hereafter resolved upon; and that they can only engage to supply training to such students whilst the institution may be kept open."

CANTERBURY DIOCESAN ASSOCIATION. — The annual meeting of this association was recently held at Sevenoaks; his Grace the Archbishop of Canterbury in the chair. His grace was supported by the Marquis of Camden, Lord Homesdale, Lord Sidney, the Earl of Romney, the Rev. Sir C. Farnaby, Sir B. Brydges, Sir Edward Deering, the Hon. and Rev. F. Noel, Mr. Deedes, M.P., Mr. W. Martin, M.P., Archdeacon Harrison, the Rev. F. V. Lockwood, and other clergymen. The report stated that the society had abandoned the training schools of Canterbury, but it had made grants for the support of pupils in the training institution of St. Mark's, Battersea, Whitelands, and Westminster. Pupils would also be received to learn the management of schools at the Maidstone and Canterbury model schools. In the financial department, 904*l.* had been voted during the year for the erection of schools, and the support of pupils in training. There were applications for grants to the amount of 845*l.*, and there was still a sum of 800*l.* due for unpaid grants. The income of the association for the year had amounted to 1394*l.* 14*s.* 11*d.*, and the expenditure had fallen short of that amount by 724*l.* 17*s.*, which sum remained as a balance in the hands of the society. On the motion of Mr. Bell, seconded by the Marquis of Camden, the report was agreed to; and, after the appointment of officers for the ensuing year, the following resolution was carried unanimously:—"That this meeting has learned with satisfaction the arrangement which has been made by the board for the inspection by clergymen of the diocese, under the immediate authority of the archbishop, of such schools as may be desirous of such inspection." The archbishop said, he could not avoid thinking that this arrangement was a very wise one. It might be interesting to the meeting to know that the training school at Battersea was likely to be given up for want of subscriptions. It was a school from which some of the best masters had gone forth, and one to which those interested in the education question looked as a very important feature in the system. It was intended to unite, if possible, that school with the schools at Westminster. The schools at Westminster were essentially different from that at Battersea and St. Mark's, as they were only intended to receive pupils for three or six months, and not to give a complete system of education, and therefore they were of less importance. The Battersea schools had been provided for the special purpose of providing trained masters for the manufacturing districts; and those districts had been in a great degree provided for, and for some time past there had been more masters to send out than occupation could be found for. This fact would, at all events, be gratifying, as no such difficulty need be found in obtaining properly trained masters as had been heretofore experienced. He hoped that the system lately commenced would, under the blessing of Providence, prove the means of materially altering the condition and habits of the poorer classes; but the ardour of many friends of the cause was damped by the knowledge that the poor could only be reached at a very early age, as they were so early called out to the active duties of life. Even this obstacle, however, could be overcome, and he sincerely trusted that the zealous aid of the association, and of the promoters of education generally, would enable them to give to the children of the poor such complete and efficient instruction as would guide and help them in their after course through life. A vote of thanks was then given to the Rev. Dr. Griffiths, the officers of the association, and finally, to his grace, the chairman, after which the meeting separated.

INDUSTRIAL TRAINING OF PAUPER CHILDREN.—We feel a sincere pleasure in recommending to the attention of Boards of Guardians a consideration of the benefits to be derived, alike to the rate-payers and to paupers, from a well-conducted system of industrial training in connection with the pauper schools of the different Unions throughout the country. Experience has fully shown the benefits resulting from such a system of training; and, without referring to several other instances, we would call attention to the case of the Guiltcross Union, at Kenninghall, in Norfolk. A report from Mr. Rackham, the Master of the Guiltcross Union Workhouse, on the subject of the industrial training of children in his Union, addressed to Sir J. Walsham, one of the Poor Law Inspectors, and to Mr. Bowyer, one of the Government Inspectors of Schools, has been recently brought under our notice, which shows in the clearest manner the advantages to be derived from this system of training. From this report we learn that of the boys now in the school fourteen are upon an average employed on the land, whilst others (who, however, take their turn also on the land) are instructed in tailoring and shoemaking, or are occupied in domestic duties. The boys labouring in the field are carefully guarded from association with the men, whenever men are employed, and are superintended by the workhouse master or the schoolmaster. The moral and industrial training of the girls in this workhouse is equally attended to, by which means they are qualified for service. During school hours the boys and girls, despite the fastidiousness which might suggest their total and complete separation, meet in the same room, and form one school, instructed by the schoolmaster and schoolmistress, the former of whom has charge of the higher and the latter of the lower classes. This mixed organization, which has existed for many years in the Kenninghall Workhouse School, has been found to be highly advantageous, not only to the progress of the children's learning, but also to the formation of their minds and manners. The course of instruction to these pauper children, in addition to the study of the Scriptures, and to reading, writing, and arithmetic, embraces geography, grammar, and English history, in all of which the proficiency of the children is stated to be above the average observable in workhouse schools. Nor has the result of this combination of moral and intellectual with industrial training, under the watchful superintendence of the master and matron as well as of the teachers, disappointed the expectations of the guardians, who, to their great credit, have always sought to place the education of the children in their workhouse on the most effective basis. No difficulty in procuring good situations for children so trained has ever been experienced; and, after leaving the workhouse, the children generally have conducted themselves satisfactorily—the instances to the contrary, we are happy to say, being very rare. Not less than sixty of the boys and girls who have been thus trained in this workhouse are now earning their own living. Beyond this, however, the result, in a pecuniary point of view, has been most beneficial to the rate-payers. At Michaelmas, 1845, the guardians of this union, animated by the laudable desire of extending the means of employing the boys in the workhouse school, and of training them to habits of industry, procured three acres of additional land adjoining the workhouse, which was at that time, to all appearance, perfectly useless for agricultural purposes. The hills and holes in it were, however, levelled by the paupers, the topsward being carefully kept uppermost. During the last year, the produce of this land has been—of potatoes, 488 stones; cabbages, 1365 stones; carrots, 105 cwts.; and of other vegetables of different kinds, charged to the union, of the value of about 6*l.* The pork supplied to the union had amounted to 195 stones, the wheat meal to 15 stones; portion of the wheat, the produce of the land, was sold for 9*l.* 2*s.*, and the straw used for beds was valued at 8*l.* 5*s.* After the payment of all expenses for manures, food for pigs, implements, rent, rates, and tithes, there has been a clear profit for labour, in the first year, of 60*l.* 2*s.* 4½*d.*; second year, 51*l.* 17*s.* 6*d.*; and to Christmas, 1849, three-quarters of a year, 67*l.* 2*s.* 9*d.* Mr. Rackham, the able and intelligent master of this union, states in his report that if the guardians would consent to keep cows, different roots and vegetables might be grown to feed them with; and these would produce an increased quantity of manure, which would afford the means of raising a large amount of roots and green crops, and secure a more extended routine in cropping the land. This would add to the profit of the land account, and give much additional comfort to the aged people and the young children in the workhouse, as a better supply of milk and butter would be obtained than can at present be had; but the immediate profit of cow-keeping would be but a trifling advantage compared with the opportunity that would be given of training the female pauper children for dairymaids, who would thereby become doubly acceptable as farm-servants; and the boys, too, would gain an acquaintance with the recent improved management of cows, which could not fail to be of some service to them.—We would earnestly recommend this example of the guardians of the Guiltcross Union to the imitation of other boards of guardians anxious to reduce the burthens of their local rates, and to raise the condition of the pauper population in the districts with which they are connected.—*Morning Chronicle.*

German *versus* French Children.—*Extract from the Correspondence of the N. Y. Commercial Advertiser.—Berlin, July* 10, 1849.—I wrote you last week from Paris, but you see, from the date of this, that in the interval I have added one to the population of the capital of Prussia. If there were nothing else to convince me of my change of locality, the pleasant chorus that rises from some school in the neighbourhood would be a sufficient proof. Children don't sing in French schools. And then what a difference in the personal appearance of the people. One does not meet here the mischievous-looking urchins that fill the streets of Paris; the boys of Germany are more quiet and sedate in their expression, and make up for a want of vivacity by a greater refinement. You feel sure that the French lad will play you some saucy trick at the earliest opportunity, but you know that you will love his German rival the better the longer you know him.

To Correspondents.

W. S. R.—No such series as you ask about has been published. We do not quite comprehend what you mean by a good illustrated Geography.

Our mathematical correspondents are requested to send in their communications so as to reach the publisher by the 21st of the month.

THE SUREST METHOD OF RAISING THE PROFESSION OF THE CHURCH SCHOOLMASTER.

The improvement of the condition of schoolmasters is a subject which some years back was repeatedly discussed in the pages of this journal.

At that time a correspondent, himself a schoolmaster, having noticed some of the methods that had been spoken of, such as an increased scale of remuneration; an improvement in the manner of conferring appointments; a greater consideration towards the masters from the managers of schools; and a reasonable security that a master's situation should be permanent; and having allowed that, beyond all question (other things being the same), a schoolmaster will maintain a superior position, as one, or more, or all of these advantages are possessed, proceeded to observe, that these are all means which lie beyond the schoolmaster's control; and that, consequently, whatever ill effects may accrue from the want of them, are not attributable to him, nor has he the opportunity of supplying them.

"But," he added, "let it not be imagined, that in improving the schoolmaster's position, the schoolmaster himself is to remain inactive. Whatever may be done *for* him in this matter, the chief part must and ought to be done *by* him. I speak not now of intellectual acquirements, or of book-learning merely (desirable, doubtless, though they be), but of those higher qualities which constitute the Christian. Let every man raise the character of the profession by raising his own. We cannot perhaps induce committees to pay larger salaries; we can, by economy and care, and, if need be, by self-denial, endeavour to support ourselves creditably on the small sums allotted us. We cannot force respect from those above us; we cannot demand a courteous demeanour, but we can deserve it. A long course of duty conscientiously performed, of conduct which even calumny cannot impugn, of unostentatious piety which manifests itself not in profession but in practice,—these are in our power; and if these do not procure us proper consideration, if these do not raise the 'status' of the schoolmaster, at least we shall have the satisfaction of knowing, that it has not been lowered by any deeds of ours. I would earnestly entreat my brethren so to act, as that, upon a general consideration of the point by those in authority, the strongest argument for raising the character of the profession may be the personal characters of the individual schoolmasters."

We have been so forcibly struck with the truth and justness of these remarks, as illustrated and confirmed in the Life of a Village Schoolmaster, lately written by Sir Thomas Phillips, that we have ventured to recall attention to them. The name of James Davies, of Devanden, is already familiar to many of our readers. In 1839 a short account of him up to that period of his life, was published under the direction of the Literature Committee of the Society for Promoting Christian Knowledge. In 1849 he closed his earthly pilgrimage at the full age of eighty-four years, and it is not perhaps the least remarkable part of his history, that during the very last years of so aged a teacher, whose whole energies were devoted simply to the persevering and conscientious discharge of the humble duties of a village schoolmaster, any incident should have occurred, that may serve as a lasting example and encouragement to all who may be engaged in the same humble, but most important office. He was borne to his grave by four of the principal farmers of the village, to the education of the poor children of which he had devoted the last year of his life; his pall was borne by an archdeacon and three of the most influential laymen of the neighbourhood; and his corpse was followed by ten clergymen of the diocese, and many others who had come from some distance to pay a marked tribute of respect and veneration to his memory. Yet for all this, under the good providence of God, he was indebted simply to "his personal character," "to a long course of duty conscientiously performed, of unostentatious piety which manifested itself not in profession but in practice." How little he owed the consideration in which he was held to "an increased scale of remuneration," will best appear from the following short extract from the chapter in which his biographer sums up his character:

> "He sought not his own advancement. The first strongly-marked act of his life was the abandonment of a calling which promised worldly success, and the choice of the humble vocation of a village weaver. When he offered his services as school-teacher at Usk, with a stipend of 30*l*., he resigned the business of his shop. When again he proceeded to the Devanden, he relinquished a certain stipend of 30*l*., in order to accept one of 20*l*., raised with difficulty, and often irregularly paid: and at the close of life he forsook the Devanden, for his last charge at Llangattock, where he laboured without wages, and provided, out of his scanty income, books and coals for his school, as well as books for circulation amongst the poor."

A few facts explanatory of this summary, and sufficient to illustrate the thesis we have chosen, will be all that our limits will allow. For the rest we must refer our readers to the interesting pages of the memoir itself, the writer of which is so well known and so highly respected, not only on account of his gallant conduct at a very trying moment, but also for his endeavours to improve the education of his countrymen. Of the soundness of his views on this latter most important subject, no better proof need be adduced than his willingness to connect his distinguished name with that of the self-denying and exemplary village schoolmaster.

James Davies was the son of a tenant-farmer, and born on the confines of the parishes of Grosmont and Llangattock-Lingoed, in the county of Monmouth. His school learning was very limited, but he read well, wrote a legible hand, and could teach the elementary rules of arithmetic. The early impressions by which character was determined, were derived from his mother. She instructed her children in the Holy Scriptures, encouraging them by small presents to commit suitable portions to memory; and it was her habit to require them to repeat to her, on Wednesdays and Fridays, the Church Catechism; and on Sundays and festival days appointed by the Church to be kept holy, the collects appropriate to such occasions. The earliest manifestations of the boy's character now remembered, consist in the regularity of his attendance at public worship, the gravity of his deportment there, and the distinctness with which he joined in the responses—a duty then, as now, very commonly neglected. A first cousin of his father, an attorney at Abergavenny, received him as a clerk, but it is not known at what age he left his father's house, or how long he continued in the house of his relative. It is certain, that before he was fourteen he had relinquished the occupation. The immediate occasion of his doing so is thus related. Meeting in Abergavenny an old woman who knew his father, she thus accosted the boy:—"Jamie Davies, why did your father, who is an honest man, put you to a lawyer? No lawyer goes to heaven!"—The boy was so much frightened at the picture of the future thus presented to him, that he forsook his master's office without making his departure known, and travelled to Bristol, distant forty miles from his home, where he remained for three weeks before the place of his sojourn was discovered.

Soon after his return home, his father died; when he apprenticed himself to a weaver, and for fifteen years continued to work at the loom; first as an apprentice, and afterwards as a journeyman, residing for the whole of that time in or near the village of Grosmont. In his twenty-third year he received confirmation at the hands of Bishop Watson—an event which exercised an important influence on his after life, by the impressions then awakened in his mind. When about thirty years old he married, and upon the death of his wife four years after, he left the village of Grosmont.

The occupation of a weaver was not well suited to a bodily frame, which had long manifested consumptive tendencies. He now engaged in that of a travelling pedlar, and the choice marks the justness of views and humility of temper, by which he was characterised. Whilst pursuing his itinerant occupation, he made his home at the picturesque little town of Usk. From it he made circuits through the adjoining country, carrying in his basket the ordinary furniture of a pedlar's store, and collecting rags, which he disposed of at paper mills in the neighbourhood of that town. To this period of his life, and to the wandering habits by which it was characterised, his biographer considers that he was indebted for an extensive acquaintance with the poor, and for some of that never-failing sympathy in their privations, which formed so prominent a feature in his benevolent character. The experience of the world and the world's ways, the knowledge of men and things, the chastened habits, the sagacity, and, above all, the will to do and suffer for others, which were manifested in his subsequent life, Sir Thomas has most happily alluded to, as exhibited during this part of his career, by giving the following extract from the *Excursion*.

> "His heart lay open; and by nature turned
> And constant disposition of his thoughts
> To sympathy with man, he was alive
> To all that was enjoyed where 'er he went,
> And all that was endured; for, in himself
> Happy, and quiet in his cheerfulness,
> He had no painful pressure from without
> That made him turn aside from wretchedness
> With coward fears. He could afford to suffer
> With those whom he saw suffer. Hence it came
> That in our best experience he was rich,
> And in the wisdom of our daily life."

After pursuing for some years the life of an itinerant pedlar, he rented a house, and carried on at Usk the business of a retail dealer, and supplied to other wayfaring dealers their stores, and bought from them the rags they had collected. In his shop he sold corn, flour, and rice, to the poor, at less than the ordinary market price; and after he had given up his shop, he provided for them flour, which he warehoused and sold, first in his room, and afterwards in his school, until the period of his quitting Usk for the Devanden. He supplied the town and neighbourhood with flour, dealing it out with his own hands at twenty-two shillings per bushel from November, 1810, to August in the following year, while the market price was from twenty-five to thirty shillings. He counted his own time and trouble as nothing, and in this way sold 1200 bushels and upwards. Even in 1831 his exertions in this affair were spoken of with grateful remembrance.

The importance of early religious teaching had been long present to his mind, and in the dedication of his future life to the education of the children of the poor, on which he now resolved, those hopes and wishes were realized, which he had formed at his confirmation. At that period he had received a small tract by Bishop Watson, entitled, *An Address to Young Persons after Confirmation.* The importance attributed by the bishop to early education, and to the office of a schoolmaster, produced abiding impressions upon James Davies, who ever afterwards cherished the desire to aid in training up the young in the ways and works of godliness. A strong affection for children, and an earnest desire that they should be brought up in the nurture of the Lord, was strongly manifested during his itinerant career; and are often mentioned by those who remember his wanderings from door to door. And in proof of this, instances are given of those whom at this period of his life he took from their parents, and placed and supported at school.

The possession of a fixed idea often works out the realization of its own cherished hopes; and events were at hand, which changed the daily routine of the life of James Davies, when his age was over forty-five years. In 1812, some friends of the religious education of the poor resolved to establish a school at Usk; and James Davies, the most zealous promoter of the good work, proposed to accept the office of master, to which he was appointed with a salary of £30. That school he conducted until the summer of 1815, to the entire satisfaction of all the subscribers, and to the evident improvement of the poor, both parents and children; and then he might have ended his days; but with him it was only a step to a wider field of usefulness. When the school at Usk had been established on a satisfactory basis, he left Usk to settle at the Devanden. His pupils accompanied their kind master on his journey; and their separation from each other took place on the public road, where he kissed and blessed those little ones who were now to lose an affectionate friend, whom we must now follow to a new field of labour.

In the course of his wanderings as a pedlar, James Davies had often traversed the parishes of New Church and Kilgwrrwg. They lie upon that part of the long ridge of hill (the forest or chase of Wentwood), where the road from Monmouth branches off, in one direction by St. Arvans towards Chepstow, and in another through Wentwood towards

Newport. On these occasions he was much impressed by what he saw of the wants of the poor, and of the ignorance and immoral habits in which the children were growing up. A spot, called the Devanden, near the summit of the ridge, within the parish of New Church, but at a considerable distance from the parish church, especially excited his sympathy. Here the cottagers seemed to him to be living without God, deprived of the outward means of religious improvement, and with minds as uncultivated as their hills. The parish church of Kilgwrrwg was less distant than that of New Church from a portion of the Devanden Hill, and here the inhabitants of the Devanden occasionally assembled for public worship. But when Davies first became acquainted with the district the little church was in decay; sheep were folded within its walls; and only on twelve Sundays in the year was divine service celebrated there. In 1811 a great improvement took place, in consequence of another clergyman being appointed, with whom Davies soon became acquainted; and it is believed, that before he undertook the school at Usk he had intimated his willingness to remove to the Devanden, as being a central position for a school, and to undertake the office of master, if a building could be raised and a small stipend provided for his support. This, after many delays, having been at length effected, he removed, as we have seen, in the summer of 1815, from Usk to his new appointment.

At the Devanden he received the charge of rude, ragged, boisterous mountain children, whose parents, accustomed to scanty fare, and exposed to peculiar temptations, were accused of dishonest practices, and of those acts of petty fraud which often prevail amidst such a population, consisting of quarrymen, mule-drivers, wood-cutters, and colliers; many of them had built their cottages and cleared the surrounding ground, which they held of the lord of the manor at moderate rents, usually on life leases. The school-room formed his dwelling throughout the day, his chamber at night; and in that room he long instructed from eighty to one hundred children, to whom there was occasionally an addition from adult scholars. His receipts were fluctuating, not unfrequently falling short of 15*l.*, and after some years' service fixed at 20*l.*, which continued until, after twenty years of labour, an endowment was provided for the school by the contributions of the public. On this, as on all occasions of his life, he discarded every selfish consideration, and cheerfully exchanged the certain stipend of 30*l.*, which he enjoyed at Usk, for the uncertainty and anxieties of a precarious income. His love for his scholars, and anxiety for their welfare, resembled that of a good father for his own children. The parents of many were very poor, and the little ones were sometimes sent from their homes without a breakfast. If, to the inquiry "Have you had your breakfast, my dear?" the answer should be "No;" a portion of the master's humble store—sometimes all he had at hand, it might be the meal he intended for himself—was bestowed upon the hungry child. Nor was the school the only object of his care. He attended to the bodily and spiritual wants of his sick and infirm neighbours. His own meal was often given to the hungry; and, in the excessive cold of a severe winter, the blankets have been removed from his bed to the cottage of a poor neighbour, at whose hands he had experienced ingratitude and unkindness.

His reverence for God's house led him to undertake the reparation of Kilgwrrwg church, towards which he contributed himself a considerable sum. But when this did not (as he fondly hoped it might) materially lessen the profanation of the Lord's day at the Devanden, the erection of a church there became the cherished object of his life. To this he clung in spite of difficulties, and years passed over his head before his prayers were answered. But, in the spring of 1829, the school-room was fitted up and opened for divine service. The master's bed and furniture were conveyed to a cottage erected for him. The clergyman did not see any objection to the employment as a village school of a room licensed for public worship. But James Davies associated such reverential ideas with a place thus dedicated to God, that he could not rest satisfied until it had been entirely set apart for sacred uses; and he resolved that another school-room should be provided on a less expensive plan. This project seemed too great even to his friends, who would give no encouragement or assistance to his resolution. But his mind was made up, and he once more became a beggar. He travelled round the country with success, and thus collected sufficient funds to erect a suitable room adjoining his cottage; and, in 1830, he had the satisfaction of keeping school in it. After some years a fund was raised, sufficient to provide, as additions to the original school-room, a chancel and an entrance porch with a bell turret, and to supply an endowment, which enabled the bishop to consecrate the simple edifice in the autumn of 1838. The pious resolution of the royal Psalmist had been often present to the humble village schoolmaster; and now the temple of God was completed, and the place of door-keeper in His house, for which the good old man had longed, was his own. He officiated as clerk and bell-ringer at Devanden chapel, from the time it was first opened until his departure from that place in 1848. Never were responses given with more pious reverence; " and never," says the parochial minister, " did I hear such an Amen as his." He ever inculcated the duty of reverent behaviour at church; of kneeling in prayer, of standing up to praise and give thanks, and of doing everything in the house of God decently and in order. In his school the children were taught the solemn obligation contracted for them in baptism, and were admonished so to mortify their evil and corrupt affections, as daily to advance in virtue and godliness of living. The remainder of his life at the Devanden, whilst it presented no very memorable incidents, was passed in doing justly, loving mercy, and walking humbly with his God.

The years of James Davies exceeded fourscore when he resolved to depart from the Devanden. He had spent there more than thirty years, and his labours had received a large share of that blessing for which he daily prayed; and he was in the neighbourhood of some kind friends, who affectionately ministered to his few earthly necessities. However, on this, as on every occasion of his life, his only consideration was, how best to promote God's glory and man's happiness. It had been his ordinary habit during the harvest season, when his school was broken up, to travel on foot to a distance from his home, with Bibles, Testaments, Prayer-books, and religious tracts, which he distributed gratuitously in cottages and farm-houses. In 1847, as well as in some former years, he selected for his benevolent labours the parish of Llangattock-Lingoed, distant fifteen miles from the Devanden. This parish adjoins Grosmont; and the farm-house in which he was born is on the confines of Llangattock, and within two miles of the parish church. The parish of Llangattock, with no resident clergyman and without a school for the young, attracted the attention and engaged the sympathies of the village schoolmaster. He had worshipped in early life in the parish church, and had received within its walls some of his school learning; and the spot exercised on his mind that influence which early recollections exert on the close of life. To his niece he writes:—"After I had determined to go to Llangattock, our clergyman insisted on knowing what reason I had for doing so. I explained to him in the best manner I could, and he was quite satisfied; but he desired me to write down my reason for leaving Devanden, which I did, and, quite unexpected to me, this letter was printed and circulated, and has been the cause of a subscription being had of upwards of 300*l.* towards building a school and house, and towards its future support; so that there is a prospect of its becoming a lasting benefit to that parish and neighbourhood." It was resolved that the building should be called "James Davies' School," and that the first stone should be laid by himself; which was done, after divine service in the parish church, in April, 1848. "No one who was present," says his biographer, "can forget the picture of the venerable disciple of his Lord and Master, as, with head uncovered, his few remaining hairs waving in the wind, he knelt upon the ground, surrounded by the children whom it would be his delight to train in that building; nor will the affecting tone be forgotten with which he uttered the words;—'To the honour of Almighty God I lay the foundation stone of this school, in the name of the Father, and of the Son, and of the Holy Ghost. Amen.'" The people were dismissed with the apostolical benediction: and by many of the poor was it afterwards told, that a good old man and self-denying Christian would come to labour in that building; and there teach the children in the ways of godliness, with no other wages than such as his heavenly Father would lay up for His faithful servant.

Before he left the Devanden he received gratifying proofs of affection from some who had benefited by his labours at that place. He expressed his sense of decreasing strength, but was grateful for the ability still left him to do a little good. "The most I can expect to do," he said, "is to make a beginning, and die." Being asked how he meant to live at Llangattock without wages, he replied that he still retained 100*l.*, given him ten years before by the Rev. Dr. Warneford, for his support in old age:—that 14*l.* yearly would be enough for his own wants; that 3*l.* would supply books for his school, and 3*l.* would be needed for other charities in the parish; and that, by thus limiting his expenditure to 20*l.* a year, he would possess a provision for five years. He opened the school at Llangattock in November, 1848, which was attended on an average by forty children. The school was altogether free, and the good schoolmaster not only took no payment for his services, but provided the books and school necessaries at his own cost. It was arranged that the occupants of the vicarage house, who farm a few acres of land, should receive, lodge, and attend upon him. This rendered the close of his life very comfortable, and he seems to have been really happy at Llangattock. In March, 1849, he writes:—"I had yesterday thirty-five children in our Sunday school and at church; and such a thing as a Sunday school, and so many children at church, was never known at Llangattock." In the harvest of 1849 he paid his usual visit to Hereford, walking nearly the whole distance, about twenty miles, and then the next day about twelve more, to see a friend in the neighbourhood; and although almost bent double with age, he seemed equal to exertions which would have fatigued many a younger man. Upon his return home he wrote:—"I was very happy to meet my dear little folks, and they seemed equally pleased to see me; and one dear little fellow did all he possibly could do to show his kindness and friendship to me. He is not five years old." When he reopened the school no indications of failing health were visible. He always rose early, and worked until breakfast-time in the plot of ground which formed the garden of the school-house. "His whole delight," writes an eye-witness, "was in doing good—visiting the poor, and relieving their wants in food, clothes, and money. To some of them he even gave his shirts to be cut up for their children. Indeed, his charity was unbounded. His Sundays were spent in giving religious instruction to the children; and on that before his death he was seen stooping down his head to the little ones, who raised up their mouths to kiss him."

He died on the Tuesday following, October 2nd, 1849, after scarcely twelve hours' indisposition. He was sensible to the last, and having solicited the prayers of his attendants, repeated the words, "God Almighty pity me!" and fell asleep. The respect shown at his funeral, for his character, has been already noticed. There were few of the ordinary trappings of mourning, but there were evidences of real grief, which could not be mistaken. After the service had been concluded at the grave, many who had assembled around it withdrew to the school-room, where a plan was proposed, which it is hoped will result in the permanent endowment of the school; the chief object for which, at eighty-three years of age, he had removed from the Devanden, and which to his dying hour was almost the only earthly wish unaccomplished. For this he left by will all his remaining property, about 74*l.*, arising from the 100*l.* of which mention has been made. "The practical lesson to be gathered from his life, is," as his biographer has justly observed, "that extensive usefulness does not depend upon extended means; but that moderate abilities and limited opportunities, wisely used, will diffuse the most valuable blessings throughout a wide circle, and exert an influence in that circle of an enduring character. Responsibility depends on opportunity; but the reward of him, to whom *one talent only is committed*, may be greater than his to whom ten are intrusted." Surely a few such personal characters as that of James Davies would suffice to raise any profession.

ON LATIN ETYMOLOGY.

No. V.

THE argument in the last paper about the origin of the two words *uber* and *uva* will be liable to misconception, if we do not make two additional remarks. What was said of *uva* is founded on the assumption that the word denotes " a whole cluster of grapes," and not a single berry. The meaning which we have attached to the word is supported by all the best lexicons; but a looseness has been introduced into some of those which are current in England, by giving to *uva* the translation "a grape;" which, as now used in our language, denotes "a separate berry," although the Italian *grappolo* and the French *grappe* signify " a cluster." Our language, it may be observed, has modified in the same manner the meaning of *raisin* as compared to *racemus*. But the error in translating *uva* as a single grape seems to have led to another error. The word *acinus*, which really means a simple berry, being dispossessed of its rights by *uva*, has been unduly forced to bear the sense of "a grape-stone," the displacement of the one word leading naturally enough to a displacement of the other. Thus Lünemann, for a second meaning of *acinus*, gives " der Traubenbeer-kern," and Mr. Riddle, " a small kernel," &c. Both these authors back their translation by the same three passages from Cicero and Pliny, in all of which the ordinary translation of a berry is quite sufficient, and in one absolutely necessary. Those who translate *acino uvae strangulatus* in Pliny, as " strangled by a grape-stone," forget two points; first, that a grape-berry is much more likely than a grape-stone to produce suffocation by closing up the passage of the windpipe; secondly, that Pliny's own term for a grape-stone is not *acinus* but *acini nucleus*. The word *acinus* in fact has but the one meaning first assigned to it by Lünemann, viz., " die Traubenbeere," one of any cluster of berries, as of the vine, the elder,* the ivy, &c.

It has been objected to the remarks we made upon *uber*, that we have left out of view its evident connection with the Greek *ουθαρ*, or as written in one of the Greek dialects, *ουφαρ*. That the words are intimately related we readily admit; but, at the same time, we thought that little light could be thrown upon the Latin word by a reference to the Greek *ουθαρ*, seeing that the latter is so utterly isolated in its own tongue that the dictionaries are driven to the ludicrous shift of calling it a radical word.

Having disposed of these two little matters, we proceed to the consideration of some other Latin words which have undergone the metamorphosis discussed in the last paper. The words *infra*, *inferi*, *inferior*, *infimus*, will gain greatly by being placed alongside of *supra*, *superi*, *superior*, *summus* (= *sub-imus*)†. So complete is the similarity of the two series that it is scarcely doing justice to it to say that it runs on all fours. Now the latter words are deduced from a base *sub*, "up;" and we must therefore reject the suffixes, *-ra*, *-eri*, *-erior*, *-imus*, and search for the base of the first series in the letters *inf.* This syllable is one scarcely to be pronounced, and is therefore very ill-suited to be an ultimate root. But if *infra* be a compression of *e-nef-ra*, the initial vowel may be regarded as non-essential, and we have a more intelligible root in the syllable *nef.* In the consideration of such a root it is essential to keep in view that the Latin mouth and ear were little conversant with aspirated letters; that the combination *th* was wholly unknown to them; and that the Greek χ had but a weak representative in the Latin *h*; the more so if, as there is reason to believe this letter *h* was oftener written than pronounced. The natural consequence of this deficiency in aspirates was, that the one aspirated consonant *f* had to perform double or even treble duty—at one time filling the office of a χ, at another of a θ. Thus *funis* is with reason compared by Lünemann to the Greek σχοινος, *furo* to θυω "I rage," *ferus* or *fera* to θηρ, *fundo* to χεω, *fumus* to θυω; and he might have added several other pairs, as *fruor* and χραομαι, *feriae* and χαιρω.

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* How is it that Mr. Riddle, in his translation of Lünemann's article, substitutes the *alder* for the *elder?* We should have referred the error to his printer, but that it occurs again under *sambucus*, and also *sambuceus*.

† Similarly from *sub* and *emo* we have not *subimo*, but *sumo;* and indeed there is good authority for writing this verb with two liquids, *summo*.

To apply these considerations to the matter before us, we contend that *nef*, of *e-nef-ra* or *infra*, is the Latin representative of the English *neth* or *neath*, as seen in *beneath*, *nether*, *nethermost.* But such a syllable as *nef* is also apt to take the form *new* or *nu.* Thus the same animal is called by ourselves indifferently "an eft" or a "newt." We cannot therefore feel any great surprise, in finding the verbs, *nu-ere*, *nu-tare*, νευ-ειν, with the sense of lowering, "dropping." We say "lowering" rather than "nodding," because the participle νενευκως is used in the sense of holding the head down. Again, in the modern Lithuanian, *nu* is the ordinary prefix to verbs in the sense of "down," as *ni* is in the Sanscrit*. We must not however connect with this root the three Greek words, ενεροι, ενερθε,† and νερθε, however closely allied in meaning and similar in form. These all flow, as is stated in Liddell and Scott's Lexicon, from the preposition εν, "in." The transition to the meaning, "below," "beneath," is explained by the fact, that the relations of place are commonly expressed by a reference to the earth, and thus the ideas of "further in" and "lower down" concur. It is precisely in the same way that the Latin language has formed *imus*, "lowest," by a compression of *in-imus*, literally "inmost." On the other hand, νεατος and νειατος, *i. e.* νεϜατος, together with the feminine forms νεατη and νητη, used as substantives, must be claimed as regularly deduced from the obsolete root νεϜ.

But νεατος, as signifying "last," must be derived, it has been said, from νεος, as μεσατος from μεσος; and the assertion is powerfully confirmed by the fact that *novissimus* is also used in the sense of "last." The argument is valid, but not at variance with what we have just said. The idea of time is naturally represented by the flow of a stream, so that in directing our thoughts to the past, we as it were ascend the stream, and thus the ideas of greater antiquity and greater height go together. On the other hand, we come *down* to present times, so that the ideas of what is down and what is recent also coincide. Hence we have no hesitation in deducing the adjectives νεϜος, *novus*, and *new* from the same verb νεϜ- or νευ-, and in attributing to them as their original meaning that of "low," a meaning which is preserved only in the superlative νεατος, "lowest." From this idea belonging to space readily comes the idea of time, "late;" whence νεατος and *novissimus*, "latest," "last;" and *nuper*, *i. e. noviper*, "lately." Again, from the notion of "late" readily flow those of "recent," "fresh," "young," "new."

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* Hence, in No. IV. p. 365, line 1, cancel the word ενερθε.

† So extensively spread is this root that even in Chinese, *ni* means "sink," "become lower."

The word *infulae* is explained by Varro, as "velamenta e lana;" and by Festus, as "filamenta lanea quibus sacerdotes . . . velabantur." Livy also has the phrase, "velata infulis." If then the notion of a veil be primitive in the word, *infula* must be treated as a compression of *e-nefula*, and so only another form of νεφελη. The connection of a veil and a cloud is already familiar in the Latin *nubes* and *nubere*. But if we read the passage in Lucretius—

Quoi simul infula, virgineos circumdata comptus
Ex utraque pari malarum parte profusa'st—

and then look at the illustrations given by Mr. Rich, s. v. *infulatus*, we are tempted to regard the depending portions of the *infula* as the more important, and so to refer the word to the old verb *nef*, "drop," of which we spoke but now in dealing with *infra*. This derivation seems preferable; but whichever etymology be preferred, we have in the word *infula* another example of a prefixed euphonic vowel followed by a compression which drives away the root vowel.

Optimus has been elsewhere explained on the same principle, as reduced from *o-botumus*, the latter portion representing with a slight modification what should have been *bon-umus*, the superlative of *bonus*. The letters *n* and *t* are both formed at the dental extremity of the palate, so that a tendency to interchange between them is à priori probable. Examples too are numerous, as the well known suffixes, *men* and ματ of verbal neuters in Latin and Greek, *nomen-*, ονοματ-, &c.; and, indeed, the Greek recovers the ν, when from ονοματ- is formed the verb ονομαινω. So again it is the belief of some good Greek scholars, that ετυπτεν in the third person represents ετυπτετ. Moreover, in pronouncing *bon-umus*, the very effort to prevent the *n* from being absorbed in the following liquid, *m*, would give the organs of speech a tendency towards the utterance of a *t*—*botumus**.

In general, wherever a word of unknown origin presents itself to the inquiries of the etymologist in the form of an initial vowel followed by two consonants, the question should be asked whether the word has been subjected to the process we have been examining. For example, are the Greek words *εχθω εχθρος* derived from a base *χεθ* or *χεδ*, and so related to our *hate* and the German *hassen?* Has the substantive *igni-* (nom. *ignis*) been subjected to compression? In discussing this word, we should keep in view the tendency of the Latin language to substitute the weak vowel *i* for the stronger vowels *a*, *o*, and *u*. Of this, in the last paper, we had an example in *imbri-* compared to the Greek *ομβρο-*. Other examples are *lingua* and *lingo*, *sine*, *cinis*, the prefix *in*, "not," compared to *lambo* and French *langue*, French *sans*, *κονις*, the Greek prefix *αν* "not," and German or English *un-*. And in the present case the change is the more probable, as *agni-* and *ugni-* are respectively the Sanscrit and Lithuanian for "fire." A second point to be noticed, is that the *g* of *igni-*, coming before an *n*, may be a substitute for a *c*, as in *cygno-* compared to *κυκνο-*.

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* An old form of *bonus* was *benus*, whence *bene*, *bellus*, &c. This, on the same principle, would have led to a superlative *betumus*, which corresponds in a remarkable manner with our own archaic superlative *betest*, now reduced to *best*, just as *latest* has become *last*.

The problem is often a difficult one to decide whether an initial vowel be of the euphonic kind, or really an original part of the word. Thus, in *ορυσσω*, the position of the *o* before a syllable containing a *v*, excites a suspicion that it is non-essential, and accordingly the Greek Lexicon we have so often quoted says: Perh. akin to *αρασσω ρασσω*. We would however ask the Greek scholars to whom we are indebted for that work, whether the real division of *ορυσσω* be not between the liquid and *υσσω*, as in *λαφ-υσσω, αιθ-υσσω, φλην-υσσω* compared with *λαπτω, αιθω, φληνω*; so that *ορυσσω* should be connected with *ορ* of *ορνυμι*, "stir."

Another troublesome word is the Latin *orbus*, with which must be included its Greek relatives *ορφος* and *ορφανος*. We will first observe, that the medial *b* in the Latin, and the aspirate *φ* in the Greek word obey the law which was found to subsist between the medials of *umbra*, *umbon-* and *umbilico-*, and *ungui-*, as compared with the aspirates of *νεφες-*, *νεφελη*, *ομφαλο-* and *ονυχ-*. If *ορφανο-* has been built on the model of *ομφαλο-*, we are conducted through a fuller form *ο-ρυφ-ανο* to a verbal base *ρυφ*. Now the English language in its obsolete verb *reave*, whence *reft*, *bereave*, *bereft*, gives us a verb whose meaning is admirably adapted for our purpose; and it may be added that a *v* was to be expected in the English root, if the analogy between *navel* and *ομφαλο-* was to be carried out. The German *nabel* would in like manner lead us to expect a *b* in the German verb, if existing; and accordingly we have the verb *rauben*. The Latin has probably the same root in *rapere*, and the root of this verb is with reason believed to be represented by the first syllable of the Greek *ἁρπ-αζειν*. But the syllable *harp* of this Greek verb seems to imply that the first letter of the root was not *r*, but an aspirate or guttural; and the same view is supported by the Spanish form of the substantive, viz., *huerfano*.

A doubt of this kind, in fact, presents itself in perhaps every instance where words appear with an initial r. But of this in our next.

CLAUDIUS.

ON TEACHING ARITHMETIC.

MENTAL CALCULATION.

SECOND LESSON.

Subtraction of Units from One to Ten.

1. WHEN the children are perfectly conversant with the addition of numbers up to ten, they may be taught subtraction according to the following method. They are still expected to operate upon sensible objects. We shall suppose that the coloured cubes already referred to are used, or that the operations are performed by means of the arithmeticon or ball-frame, which is generally found in infant schools.

2. The lessons on addition are combined with those on subtraction; thus:—

One cube and one cube are two cubes; one cube from two cubes and one cube is left.

Two cubes and one cube are three cubes; one cube from three cubes and two cubes are left, or remain.

Three cubes and one cube are four cubes; one cube from four cubes, and three cubes remain:—

And so on till

Nine cubes and one cube are ten cubes; one cube from ten cubes and nine cubes remain.

3. The reverse process is now to be gone through; thus:—

Ten cubes less one cube are nine cubes,
or
One cube from ten cubes and nine cubes remain.

Nine cubes less one cube are eight cubes,
or
One cube from nine cubes and eight cubes remain.

Eight cubes less one cube are seven cubes,
or
One cube from eight cubes and seven cubes remain:—

And so on till

One cube less one cube is nothing;
or
One cube from one cube and nothing remains.

4. Combine the preceding exercises in the following manner:—

Two comes after one; three comes after two; four comes after three; and so on to ten.

Then go backwards thus:—

Nine comes before ten; eight comes before nine; seven comes before eight; and so on till, two comes before one.

5. The following exercises, on the comparison of a number with that which precedes and with that which follows it, will tend still further to impress on the minds of the children some of the fundamental principles of calculation.

One cube is one cube less than two cubes.

Two cubes are one cube less than three cubes.

Three cubes are one cube less than four cubes :—
And so on till
Nine cubes are one cube less than ten cubes.

6. Then take the reverse process, thus :—
Ten cubes are one cube more than nine cubes.
Nine cubes are one cube more than eight cubes.
Eight cubes are one cube more than seven cubes :—
And so on till
Two cubes are one cube more than one cube.

7. The following method of showing the formation of numbers should be practised on the black board. Let the teacher write those on the left-hand side of the equality, and then require some child to form the corresponding number on the right. The signs *plus* and *minus* must be explained.

Addition.

● + ● = ● ●

● ● + ● = ● ● ●

● ● ● + ● = ● ● ● ●

as far as

● ● ● ● ● ● ● ● ● + ● = ● ● ● ● ● ● ● ● ● ●

Subtraction.

||||| ||||| − | = ||||| ||||

||||| |||| − | = ||||| |||

as far as

|| − | = |

| − | = 0(*)

8. The children may now be taught the signs, 1, 2, 3, &c. They may also be told the various names by which these characters are designated, such as, figures, the nine digits, &c. The teacher should form on the black board, as below, lines, &c., and require the children to practise the formation of the figures on their slates. Their attempts will, at first, be unsightly, but, by a little practice and patience, they will learn to form them both neatly and quickly. In many schools a bad habit prevails of allowing children to count and write with *bits* of pencils. This is an evil which cannot be abolished too soon ; and, at the present day, there is no excuse for its retention. The slate-pencils should always be placed in *steel pencil cases*.† A child should never be permitted to use a pencil that is shorter than his *middle finger ;* it ought to be, at the least, two inches longer than that important member. If

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* Explain this sign.

† To be obtained at the National Society's School Depôt.

the pencil is short, the fingers become cramped, the hand is thrown out of its proper position, and only two fingers are brought into action instead of three.

Knowledge and formation of the figures.

| = 1
| | = 2
| | | = 3
| | | | = 4
| | | | | = 5
| | | | | | = 6
| | | | | | | = 7
| | | | | | | | = 8
| | | | | | | | | = 9

9. Care must be taken that the children clearly understand the value of each of these figures, and, for this purpose, they should be well exercised upon them in some such manner as the following:—

(*a*) Let dots or lines be made upon the black board, and require some one to form the figure which represents the value of the number of dots. Should the pupil who comes out fail to do this correctly, then let another try it. When the proper figure has been written down, then let its value be enounced.

(*b*) Let a figure be written on the black board, and then require some one to enounce its value, or ***read the figure***, as it is generally termed.

(*c*) Let a figure be written on the board; then let each child, in rotation, form one of the same value.

(*d*) Name a number, and require some one to write down the figure. This may be done by bringing out the children ***individually*** to form the figure on the board; or, if they have slates and pencils, they may be required to write the same figure on their slates, ***simultaneously***.

10. The questions should be classified according to the divisions previously given. The following are constructed according to the forms 2 and 3 in page 363.

(*a*) Two nuts less one nut. Take one ball from five balls. Nine apples less one apple. Take one orange from seven oranges. And so on.

(*b*) One from one, how many remain? One from six how many? How many are left when one is taken from ten? And so on.

11. Questions on the comparison of one number with another.

(*a*) How much is six more than five? Seven are how many more than six? Five is how much more than four?

(*b*) What number is one more than seven? What number is one greater than five? What number is one above eight? And so on.

(*c*) Nine is one more than what number? Six is one above what number? Ten is one greater than what number? And so on.

12. The following exercises are very useful: they are to be performed by means of the black board.

(*a*) Represent the number six by lines. Make as many dots as there are fingers on your right hand. Make as many circles as there are feet to four boys. Make three rows of dots, and put three dots in each row. In how many ways could you show the number seven?

(*b*) Make the figure which shows the value of • • •. Form lines corresponding to the figure 4. What figure would show the value of the following :⁝⁝? Read the following figures 2, 3, 9, &c.

13. The following are general questions:—
    1. What number is found between eight and six?
    2. If you have three tops, and lose one of them, how many are left?
    3. A boy has three pence; he spends two pence; how much remains?
    4. What numbers will make three, or what is three composed of? Ans. Of three ones, or one and two.
    5. If you lose one finger from one hand, how many would you have left on that hand.
    6. Jane had four pins and dropped one of them, how many were left?
    7. If there are four candles burning and you put out three of them, how many are left burning?
    8. If one leg of a table be broken, how many whole ones are there?
    9. If you have five marbles and all are blue but one, how many blue ones are there?
    10. If you have six cubes and all are red but one, how many red ones are there?
    11. If you have one cube and six cubes and take away one, how many remain?
    12. John had eight marbles; he gave away one and seven; how many had he left?
    13. Shut both your thumbs; how many fingers remain open?

(*To be continued.*)

ROYAL NAVAL SCHOOLS, GREENWICH HOSPITAL. EXAMINATION PAPERS BY THE REV. HENRY MOSELEY, M.A., F.R.S., &c., HER MAJESTY'S INSPECTOR OF SCHOOLS.

MIDSUMMER, 1850.

NAUTICAL SCHOOL—SENIOR DIVISION.

(*One Question only is to be answered in each Section.*)

SECOND CLASS.

A sentence will be read to you which you must write out with a careful attention to the spelling and penmanship.

SECTION I.—1. Reduce $\frac{56}{63}$ and $\frac{68040}{72576}$ to their lowest terms.

2. Add together $\frac{3}{8}$, $\frac{5}{12}$, and $\frac{4}{9}$.

3. Reduce $\frac{2}{11}$ of $\frac{5}{8}$ of $\frac{22}{25}$ to its equivalent simple fraction.

SECTION II.—1. Of what sum is 7½*d.* two-thirds?

2. A piece of cloth containing 25½ yards cost 3*l.* 11*s.* 2½*d.*; what is that per yard?

3. A carriage-wheel revolves 4 times in going 13 yards; how often will it revolve in going 2½ miles?

SECTION III.—1. From a given point to draw a straight line equal to a given straight line.

2. If two angles of a triangle be equal to one another, the sides also which subtend or are opposite to the equal angles, shall be equal.

3. If two triangles have two sides of the one equal to two sides of the other, and have likewise their bases equal, the angle contained by the two sides of the one shall be equal to the angle contained by the two sides, equal to them, of the other.

SECTION IV.—1. Find the value of

$$\frac{4z^2}{2-x} + \frac{3y^2}{2+x} \text{ when } x = 3,\ y = 4,\ z = 5.$$

2. From $x^3 - 4x^2 + 8x - 6$ subtract $\frac{x^3}{3} + x^2 - x + \frac{1}{2}$.

3. Multiply $1 - x$ by $x - 4x^2$.

SECTION V.—1. Divide $a^6 - x^6$ by $a^2 - x^2$.

2. Solve the equation

$$5 + \frac{x}{3} = \frac{x}{2} + 1.$$

3. A father left his two sons 1000*l.* To the younger he gave half of what he gave to the elder and 10*l.* more; what had each?

SECTION VI.—Draw a map of Asia.

SECTION VII.—Parse the following sentence:—"Here is the book which you lost."

THIRD CLASS.

A sentence will be read to you which you must write out with a careful attention to the spelling and penmanship.

(*One Question only is to be answered in each Section.*)

SECTION I.—1. Write down in figures the number one hundred thousand and ten, and subtract from it ten thousand and ten.

2. From what number must I subtract 12,659 to leave 57,094?

3. Multiply 37,908 by 35,821.

4. Divide 944,146,875 by 875.

SECTION II.—1. If two men earn 30*s.* in 3 days, what will one man earn in a day?

2. A. offers to give B. an apple for two pears; how many apples can B. have by giving A. 52 pears?

SECTION III.—1. What is the price of 279 cwts. at 3*l.* 7*s.* 10¼*d.* per cwt.?

2. How much a day is 860*l.* 0*s.* 7½*d.* a year?

SECTION IV.—1. Two vessels are 70 miles apart and sailing towards one another; one sails at the rate of 8 miles an hour and meets the other after sailing 40 miles; at what rate per hour did the other sail?

2. What is the carriage of 5 hhds. of sugar, each 4 cwts. 3 qrs. 21 lbs. at 12*s.* 6*d.* per ton?

SECTION V.—Draw a map of Africa.

SECTION VI.—Parse the following sentence:—

"A good boy obeys his parents."

SECTION VII.—Write down the names of the pieces of poetry you have committed to memory, and ten lines from any one of them.

FOURTH CLASS.

1. A sentence will be read to you, which you are to write down carefully and spell correctly.
2. What is a noun? How many cases have nouns, and what are they? Decline the noun "Boy." State what are the parts of speech in the following sentence:—"Our Midsummer holidays will soon begin."
3. FIRST DIVISION:
    At 7*l.* 4*s.* 3*d.* per cwt. what is the cost of 3 lbs. of raisins?
    What is the cost of 365 bottles of wine at 2*l.* 13*s.* 6*d.* per dozen?
4. SECOND DIVISION:
    Reduce 497*l.* 12*s.* 8*d.* to farthings, and 2300 pence to pounds.
    Reduce 59 tons, 11 cwt. 7 qrs. 8 lbs. to lbs., and 23,456 feet to miles.
5. THIRD DIVISION:
    Add together 5*l.* 16*s.* 3¼*d.*, 19*s.* 8½*d.*, 3*l.* 12*s.* 4*d.*, and 2*l.* 0*s.* 0½*d.*
    Multiply 9*l.* 7*s.* 8*d.* by 11, and 2*l.* 8*s.* 7¾*d.* by 23.
    Divide 1*l.* 0*s.* 0*d.* by 7, and 59*l.* 11*s.* 11½*d.* by 27.
6. FOURTH DIVISION:
    Add together 57,809, 5236, 52, 911,005.
    Subtract 520,976,325 from 610,863,102.
    Multiply 16,734 by 3004.
    Divide 325,000 by 85.
    Divide 980,263,711 by 809.
7. Draw a map of Palestine.

LOWER SCHOOL.—FIRST CLASS.

(*One Question only is to be answered in each Section.*)

SECTION I.—1. Sailed from Shetland, in lat. 60° 9′ N.; long.

0° 56′ W., upon the following true courses: N.E. by N. 180 miles, N.N.W. 240 miles, S. by W. ½ W. 110 miles, N.E. 284 miles, S. 96 miles; find the long. and lat. of place arrived at, and course and distance made good.

2. Find the course and distance from the Lizard, in lat. 49° 57′ N., long. 5° 15′ W. and St. Mary's, lat. 36° 57′ N., long. 25° 9′ W.

SECTION II.—1. Prove that departure = diff. long. × cosine lat.

2. Prove that in Mercator's sailing, tangent of the course $= \dfrac{\text{diff. long.}}{\text{merid. diff. lat.}}$

SECTION III.—1. $\cos(A + B) = \cos A \cos B - \sin A \sin B$

$$2.\ \operatorname{Tan}(45^\circ + \tfrac{1}{2} A) = \frac{\cos A}{1 - \sin A}$$

3. In any plane triangle

$$\operatorname{Sin} \tfrac{1}{2} A = \sqrt{\frac{(S - b)(S - c)}{b c}}$$

4. In any spherical triangle

$$\operatorname{Cos} a = \cos b \cos c + \cos A \sin b \sin c$$

SECTION IV.—1. At what rate is a place in 45° N. latitude carried per hour by the diurnal revolution of the earth?

2. By what means can the distance from one another of two remote objects C and D be determined, by observations taken from stations A and B, whose distance from one another is known, and whence the objects C and D are visible?

3. The distances from one another of three objects in the same horizontal plane, but not in the same straight line, being known; I observe the angles they make with one another from a distant point in the same plane. How can the position of this point, in respect to them, be determined, 1st, by construction, and 2ndly, by calculation?

SECTION V.—1. July 21, 1850. Approximate lat. 62° N., long. 67° W., observed merid. alt. of the Sun's lower limb 48° 28′ 10″. Index error —15″. Height of the eye 14 feet. Required the latitude of place of observation.

2. Near London, lat. 51° 29′ N. September 9, 1850, at 9h. 45′ A.M. observed ⊙ 71° 51′ 0″ magc. azimuth of ⊙'s centre, N. 159° 20′ E. Index error —50. Determine the variation of the compass.

SECTION VI.—November 7, 1850, at 5¼h. P. M. in lat. 11° 55′ 10″ S. and supposed long. 144° E. Time by chronometer, 7h. 38m. 51s. Altitude ⊙ 9° 49′ 20″. Index error —2′ 30″. Height of eye 20 feet. Determine the longitude. The chronometer slow, Greenwich mean time, October 25, 12s·5, losing daily 0s·6.

FIRST AND SECOND CLASSES.

A sentence will be read to you, which you must write down with a careful attention to the spelling and the penmanship.

(*One Question only is to be answered in each Section by the boys of* *the First Class. Those of the Second Class may answer any of the Questions.*)

SECTION I.—Parse the following sentence:—" Here is the book which you lost."

SECTION II.—1. Describe the course of the river Rhine.

2. Write down what you know of British India.

SECTION III.—1. A servant's wages are 18*l.* a year, how much is due for seven weeks and three days' servitude?

2. What is the difference between $\frac{7}{8}$ of a cwt. and $\frac{3}{8}$ of a ton?

3. Find the value of $\frac{1}{\sqrt{3}}$ to four places of decimals.

SECTION IV.—1. How many cubic feet of timber are there in 23 rafters, each 15 feet long, $4\frac{1}{2}$ inches deep, and $2\frac{1}{2}$ inches wide?

2. At what rate per lb. must I buy sugar which I sell at 7*d.* per lb., in order to gain 18 per cent.?

3. The standard coin of this realm is made up of 37 parts pure silver and 3 of copper, and a lb. troy of this compound metal yields 66 shillings; what weight of pure silver in 20 shillings is there?

SECTION V.—1. The exterior angle of a triangle is greater than either of the interior and opposite.

2. The angles in the same segment of a circle are equal.

3. Of all triangles on the same base and between the same parallels the isosceles has the greatest vertical angle.

SECTION VI.—1. All the interior angles of any rectilineal figure, together with four right angles, are equal to twice as many right angles as the figure has sides.

2. If the square described upon one side of a triangle be equal to the sum of the squares described upon the other two sides of it, the angle contained by these two sides is a right angle.

3. In every triangle the square of the side subtending either of the acute angles is less than the squares of the sides containing that angle by twice the rectangle contained by either of those sides, and the straight line intercepted between the acute angle and the perpendicular let fall upon it from the opposite angle.

N.B. The first case only of this proposition is to be proved.

4. The sides about the equal angles of equiangular triangles are proportionals.

SECTION VII.—1. Multiply $a - \frac{x^2}{a}$ by $\frac{a}{x} + \frac{x}{a}$

2. Solve the equation.

$$x + \frac{3x - 5}{2} = 12 - \frac{2x - 4}{3}$$

3. Solve the equation

$$\frac{x^2}{(x^2 - 4)^2} + \frac{6}{x^2 - 4} = \frac{351}{25x^2}$$

SECTION VIII.—1. What two numbers are those whose sum is 7 and the difference of their squares 21?

2. The cornice of a square room costs 8*d.* per foot in length, and the ceiling 7*d.* per square foot: the whole cost of the ceiling and cornice is 3*l.*; what are the dimensions of the room?

3. The labour of sewing similar gloves of different dimensions varies directly as their lengths, and the quantity of leather in them varies as the squares of their lengths; now the cost of a pair of gloves 8 inches long is 2*s.* 6*d.*, and that of a similar pair 6 inches long is 1*s.* 9*d.*; investigate a formula representing the cost of a pair x inches long.

SECTION IX.—1. From what depth will an engine of 5-horse power raise 4 tons of coal per hour?

2. A labourer working with a wheel and axle 8 hours a day can yield at the rate of 2600 units of work per minute. How much must he charge per ton for raising coals from a depth of 25 fathoms, in order that he may earn 2*s.* 6*d.* per day?

3. An engine of 5-horse power raises 30 cwt. of coals per hour from a pit whose depth is 240 fathoms, and at the same time gives motion to a forge hammer which makes 25 lifts per minute, each lift being 3 feet; it is required to determine the weight of the hammer.

THIRD CLASS.

A sentence will be read to you, which you will write down carefully and spell correctly.

(*One Question only is to be answered in each Section.*)

SECTION I.—1. In 39d. 13h. 25m. how many seconds?

2. In 25,967 feet how many miles?

3. A train travels at the rate of 25 miles an hour; how far does it travel every minute?

SECTION II.—1. How much money must I add to 340*l.* 7*s.* 9*d.* to make up the sum of 500*l*?

2. Multiply 5*l.* 17*s.* 9¼*d.* by 7.

3. How many persons can receive 4*s.* 6*d.* each out of 4*l.* 19*s.* 6½*d.*?

SECTION III.—1. If seven men earn 3*l.* 10*s.* in three months, what does each man earn in a month?

2. What must a person's annual income be, in order that he may spend daily 1*l.* 11*s.*, and lay by 434*l.* 5*s.* at the year's end?

3. What is the carriage of 5 hogsheads of sugar, each 4 cwt. 3 qrs. 21 lbs., at 12*s.* 6*d.* per ton?

SECTION IV.—Draw a map of Europe.

SECTION V.—What are the parts of speech in the following sentence:—"We did not see him then, but may have that pleasure hereafter"?

SECTION VI.—1. From a given point to draw a straight line equal to a given straight line.

2. To draw a straight line perpendicular to a given straight line from a given point in the same.

3. If from the ends of the base of a triangle there be drawn two straight lines to a point within the triangle, these shall be less than the other two sides of the triangle, but shall contain a greater angle.

LECTURES.

(*One Question only is to be answered in each Section.*)

SECTION I.—1. What happens to a ray of light coming from water into air? What experiment illustrates this? Will the ray pass through the surface of the water at whatever angle it is incident upon it?

2. On what principle is it, and by what experiment, that the different coloured rays which compose white light can be separated?

3. Describe and explain the construction of the astronomical telescope. Why must the focus of the eye-glass coincide with that of the object-glass? Why do we see distant objects more clearly with the telescope than with the naked eye?

SECTION II.—1. How may a bar of hard steel be converted into a magnet?

2. What is meant by induced magnetism? Is such induced magnetism ever produced in the iron of a ship, and by what cause? Has any expedient been adopted to neutralize its effect on the compass; and what?

SECTION III.—1. If a bar magnet were suspended from its centre of gravity by a fine thread, would it remain in a horizontal position? If not, would it incline equally in all places?

2. What is meant by magnetic variation? Is it the same at all places, and at all times? Mention some of those places where it is the greatest, and where the least.

3. What is an electro-magnet? How is it made? How may it be made to lose its magnetic properties instantaneously? How has it been applied in the electric telegraph?

SECTION IV.—1. How may oxygen gas be obtained, and what are its properties?

2. What are the component elements of water? How may hydrogen gas be obtained from it? What becomes of the oxygen of the water in this experiment, and what of the acid?

3. Write down all you know about carbon. What has it to do with respiration and the combustion of fuel?

SECTION V.—1. A man capable of lifting 200 lbs. wishes to raise a ton weight by means of a crow-bar 5 feet long. Where must the weight bear upon it, the fulcrum being at one end and the man lifting at the other?

2. Describe any one of the different systems of pulleys, and show what is the relation between the power and weight.

3. From what depth will an engine of 5-horse power raise 4 tons of coal per hour?

SECTION VI.—1. Why is the atmosphere less dense as we ascend higher in it? Do you see any connection between the temperature at which water boils and the height of the barometer?

2. Describe some simple experiment showing that metals expand when heated. In what way does this property affect the rates of clocks and watches, and how are its effects compensated?

SECTION VII.—1. The surface of the water in the reservoir of a water-works is 200 feet above the level of one of the mains, in which is a circular plug 3 inches in diameter. What is the pressure tending to raise the plug?

2. How low must a single hoop be placed round the staves of a tub 9 feet high and full of water, that it may just prevent them from opening at the bottom?

SECTION VIII.—1. How is it known that the earth's surface is not a plane as it seems to be, and how is it known that its shape is nearly that of a sphere, and that it turns round?

2. What is the cause of the tides,—of some tides being higher than others,—and of the times of high water being different on successive days?

3. Why do not eclipses occur every month? Why do similar eclipses return every 19 years? How often would they return if there were no regression of the moon's nodes?

SECTION IX.—1. Why do easterly winds prevail within the tropics, and westerly winds without them?

2. What are the monsoons of the Indian Ocean? How do you account for them?

3. Why is the temperature of the ocean more equable than that of the land? Why are the climates of the western sea-bords of the great continents milder than those of the eastern sea-bords?

SUGGESTIVE QUESTIONS IN PHYSICAL GEOGRAPHY.*

1. WHAT is comprised in a knowledge of physical geography?
2. State some of the facts which tend to prove that the earth is a round body.
3. What is the length of the equatorial and polar diameters?
4. Give the mean density of the earth. Its mass compared with that of the Sun.
5. What is the length of a pendulum vibrating seconds at the equator and at the poles?
6. What is the mean length of a degree of a meridian?
7. Explain why the torrid zone is limited by parallels, 23°, 28′ (nearly) on each side of the equator, and why the polar zones are included within circles 23°, 28′ (nearly) from each pole.
8. What does the science of geology teach?
9. From what class of facts do we conclude that the earth was repeatedly supplied with plants and animals, altogether different from those now living?
10. In what state are organic remains generally found?
11. Distinguish between zoology and paleontology.
12. Explain the terms "Rock," "Plutonic or Igneous Rocks," "Sedimentary or Stratified Rocks," and "Geological Formation."
13. What kind of rocks contain fossils?
14. Mention the different formations of stratified rocks.
15. Name the fossiliferous strata.

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* In constructing these questions we have consulted Mrs. Somerville's "Physical Geography," and Hughes' "Outlines of Physical Geography," but chiefly the latter work.

16. Over what districts of the British Islands do the Silurian, carboniferous and cretaceous formations extend?

17. What is understood by "Ages of Nature?" Enumerate the different geological epochs.

18. State the superficies of the globe, and the areas occupied by land and water.

19. Compare the relative quantities of land in the eastern and western, and in the northern and southern hemispheres.

20. Contrast the phenomena resulting from the opposite direction of the land in the eastern and western hemispheres.

21. Show how the physical geography of a country influences the character and social condition of its inhabitants.

22. Compare the dimensions of the five continents, and give their boundaries.

23. Give the areas of the great oceans, and contrast the Pacific and Atlantic.

24. Mention some of the changes that are going on upon the earth's surface, and the causes of them.

25. Of what shape are the larger land masses in their general outline? Give examples of the form alluded to.

26. Give examples of the greatest extension of the continents towards the north and south, under the same meridian.

27. Contrast the northern and southern sides of the great continents, and the coasts of the land in the northern and southern hemispheres.

28. State the general direction of promontories, and give examples and exceptions of the law.

29. Compare the configuration of Europe and Asia, of N. America and Asia, of S. America and Africa,

30. Explain the terms *horizontal* and *vertical profile*.

31. Give the length of line of shores of Europe, Asia, Africa, Australia, N. America, S. America.

32. What important phenomena are to be referred to the highlands of the earth?

33 State the result of Humboldt's investigation relative to the proportion of highland and lowland upon the earth's surface.

34. Give examples of mountain systems and of insulated mountains.

35. In what mountain ranges do granite and porphyry prevail?

36. Contrast the slopes of the old and new continents, and give the length of the northern and southern slopes of Eastern and Western Asia, Central Europe, Africa, North, Central, and South America.

37. Show the effects of lofty mountains upon climate.

38. Enumerate the principal table-lands, and give their mean elevation and culminating points.

39. Compare the direction of mountain systems in the Old and New World.

40. Trace, in a connected view, the general lines of the great mountain systems of the globe.

41. Give the elevation of the culminating points of the Himalaya, Alpine, Rocky, and Cordillera ranges.

42. Mention some of the uses of mountains in the economy of nature.

43. Give examples of upland and lowland plains.

44. What are the steppes, prairies, savannahs, llanos, and pampas? Contrast their vegetable and animal productions.

45. Distinguish between longitudinal and transverse valleys, and give examples of each kind.

46. Enumerate and describe the valleys of Europe, Asia, Africa, and S. America.

47. What is understood by the term "desert?"

48. Mention the principal deserts, and describe the Sahara.

49. Distinguish between continental and oceanic islands, and give examples of each class.

50. Point out the regions of coral formations, and describe the growth of coral.

51. State Darwin's theory of coral formations.

52. Trace out the principal volcanic districts.

53. Enumerate some of the principal active volcanoes.

54. What is probably the purpose fulfilled in the economy of nature by volcanoes?

55. What are the chief chemical and physical peculiarities of the ocean?

56. Account for the different shades in its colour, and give Ehrenberg's opinion as to the cause of the colour of the Red Sea.

57. What chemical substances are held in solution by sea-water?

58. Describe some of the experiments made to ascertain the temperature of the ocean at different depths.

59. What results have been deduced from the comparative observations of the temperature of the sea?

60. What is meant by the phosphorescence of the ocean?

61. Contrast the basins of the Baltic and Mediterranean Seas.

62. Give the depths sounded by Scoresby, Ross, and Davis; and point out the localities in which the soundings were made.

63. What is Professor Pierce's theory as to the depth of the Atlantic?

64. What general conclusion has been come to in regard to the depth of the margin waters of the ocean, and along the shores of interior seas?

65. Give examples of a difference of level between the ocean and some of its branches, and assign the causes for this difference.

66. Account for the formation of waves, and explain the terms *sea-wave, tide-wave, ground-swell,* and *wave of transmission.*

67. Explain fully the cause of tides, distinguishing between *spring* and *neap.*

68. What is meant by "Establishment of the Port?" What are co-tidal lines?

69. Trace the course of the tide-wave, and describe its progress round the British Islands.

70. Mention seas in which there are no tides, and account for this fact.

71. To what causes are currents in the ocean to be referred; and show how, in each case, they may be established? What are *surface* and *submarine* currents?

72. Trace the direction of the great oceanic current, and name its branches in the Pacific and Atlantic.

73. State what you know about the Gulf stream. In what period does it complete its grand tour of the Atlantic?

74. How may currents be classified? Explain how their direction becomes known.

75. Relate what you know of the influence and aspect of the ocean.

76. Explain the formation of rivers.

77. Define *river-basin, watershed, bifurcation, developement* of rivers.

78. Account for the formation of deltas, and enumerate the principal Deltic rivers.

79. What are tidal-rivers, and distinguish between oceanic and continental rivers?

80. Upon what does the magnitude of rivers depend?

81. Explain the phenomenon of the "bore," and name the rivers in which it occurs.

82. Describe the course of the Amazon, Ohio, and Mississippi.

83. Describe the formation of the Delta of the Mississippi.

84. Trace out the best watered regions of the respective continents.

85. Enumerate the larger rivers, and name the seas into which they fall.
86. Explain fully upon what the course of rivers depends.
87. How may rivers be classified into systems?
88. Account for the vast morasses which occupy the northern portion of Asia.
89. Compare the river systems of Europe and Asia.
90. Describe the part assigned to rivers in the general economy of nature.
91. How may lakes be classified?
92. Name some of the larger fresh and salt-water lakes.
93. Trace out the lake district of Europe and N. America.
94. In what respect does the water of the Dead Sea differ from that of other lakes?
95. Give the areas of the great American lakes; of the British lakes; also the length of the larger continental rivers, and the areas of their basins.

(*To be continued.*)

Correspondence.

PARALLEL DESKS.

Sir,—Whilst inspecting the new parallel desks recently fitted up in my school, an idea occurred to me with reference to them, that if carried out, would I think greatly assist the teacher as well as prove an improvement in the organization of his school.

Parallel desks are now generally made with no compartments for the books and slates of each pupil, but simply consisting of a plain board screwed to an iron stand, which is fixed upon a graduated floor; and a press or cupboard contains the apparatus of the whole school.

If a sheet of slate, about a quarter of an inch thick, were laid over the sloping part of the desk, as mahogany or rose-wood is upon common material, I imagine that desks so arranged would supersede the use of the common school-slates.

The noise resulting from giving and gathering the slates at the change of lessons would no longer disturb the quiet discipline of the school. While, each pupil having so large a surface of slate before him, the art of mapping or drawing might be more conveniently taught. Another advantage arising from this arrangement is, that by the use of a wet sponge all ink marks or dirt of any kind might be easily removed.

I offer this suggestion for the consideration of my brethren in the work, and shall be happy to know their opinion.

A BATTERSEA MASTER.

IGNORANCE OF COMMON SPELLING.

Sir,—It is, as you probably are aware, by no means an uncommon case for boys of ten or eleven years of age to betray, when sent to classical and upper schools, the grossest ignorance of common spelling. Every letter sent by such boys to their parents, if uncorrected by the master, furnishes a fresh occasion of complaint; and the classical teacher, in addition to his other work, is expected to remedy a fault which, in its excess at least, ought to have been obviated at home, or at the preparatory school. I speak from experience. I have had letters of remonstrance from parents on this subject before their children have been two months under my care, and when it could not in common reason have been expected that I should so soon have remedied the effect of previous negligence.

Parents seem often to reason as if the mere fact of commencing classical studies, as it certainly does generally imply some previous knowledge of the vernacular, must supply this knowledge miraculously in cases whêre ordinary means for attaining it have never been used. Accordingly, it is alleged as a reproach to the instructor, that boys who cannot spell English should be learning Latin and Greek.

Now it is not to be expected that a classical master of good standing should devote his time, or any portion of it, to hearing a spelling class of great neglected lads, who ought to be otherwise employed, and who are expected to be making progress in more advanced studies.

To the mode of teaching spelling by dictation there are serious objections. The main secret of teaching orthography is this—that a boy should never be allowed to *see a word improperly spelt*, if we can possibly prevent it. In writing from dictation, words are often either spelt at hap-hazard, and a false impression, not easily to be removed, is thus made upon the eye; or, if the boy wrongly fancies that he knows the orthography already, a false impression is confirmed, which is one step worse. It is very doubtful whether the wrong idea thus formed will not prove too strong to be completely effaced by the subsequent reproof and emendation of the master:—the pupil will at any rate, in the case of such words, probably feel embarrassed for some time to come.

My plan was this. My pupils were examined three or four afternoons in the week in a few pages of geography or history. When hearing the junior classes, it was *invariably* my practice to make a mark with a pencil under the words which appeared to me most likely to be the hardest. These words I then read over, making the boys mark them in their own books. Then, instead of ordinary copies, I made them write out, in a small neat hand, each of these words *at least four times consecutively, copying them from the history or geography book*, so that there could be no possibility of mistake or false impression. I found that, by this plan, the boys got more into the habit of scrutinizing the words as they read, and not contenting themselves with vague ideas of the component letters. Indeed, this practice of repetition answered admirably, and I cordially recommend it in cases parallel to my own. I am, Sir, your most obedient servant,

A QUONDAM SCHOOLMASTER.

⁂ After what has been said, it is almost needless to comment upon the elaborate folly of setting boys what are called orthographical exercises; in which misspelt words are wilfully presented to a boy's eye, in order that having produced in his experiments various false impressions on his retina, he may ultimately hit upon the proper orthography. This is worse than dictation.

Notices of Books.

THE ELEMENTS OF ALGEBRA: CHIEFLY INTENDED FOR SCHOOLS AND THE JUNIOR CLASSES IN COLLEGES. BY THE REV. T. G. HALL, M.A., PROFESSOR OF MATHEMATICS IN KING'S COLLEGE, LONDON.—Third Edition. (London: *John W. Parker.*)

HALL'S Algebra is well known as a useful and comprehensive treatise; and, the present edition being published at a reduced price, whereby the circulation of the work is likely to be greatly increased among our readers, it would seem that some notice from us is not altogether uncalled-for.

We should not recommend a person who has no knowledge of algebra to *commence* the study of it with this work. It will be more advantageous for him to take up some little treatise* of a more elementary kind, which shall not perplex him with long divisions, complicated common measures, or equations requiring some peculiar artifice in their solution. But to the student who shall have thoroughly mastered such an introductory course, and who wishes to obtain a more comprehensive knowledge of the subject, the treatise now before us may be safely recommended both for its cheapness and its intrinsic merit.

It will not, of course, be inferred from this *general* approval and consequent recommendation of the work that we always like the manner in which the various subjects are handled. Some portions of the book seem capable of improvement, and we will take a glance at one or two of the more prominent defects.

One of the most unsatisfactory sections is Chapter IV., which treats of the greatest common measure and least common multiple of two or more quantities—topics well adapted, if the investigations be logically and perspicuously arranged, for developing the reasoning powers of the student. Such an arrangement the author has unfortunately not adopted; he seems to have striven to present the investigations in the simplest form and in the shortest space possible, but in the attempt he has lost sight of perspicuity and logical accuracy. We have room for one extract only in support of our position.

> "To find the greatest common measure of three numbers *a*, *b*, *c*.
> Let D be the greatest common measure of *a* and *b*
> and E „ „ „ of D and *c*.
> Then E is „ „ „ of *a*, *b*, *c*.
>
> "For every common measure of *a* and *b* measures D, therefore E measures *a* and *b*; and it is the greatest that measures D and *c*, therefore it is the greatest which measures *a*, *b*, *c*."

'Every common measure of *a* and *b* measures D', *therefore*, 'E measures *a* and *b*;' we suppose the suppressed premise is 'E measures D,' and supplying this, the syllogism will stand as follows:—

Every common measure of *a* and *b* measures D,
E measures D,
therefore, E measures *a* and *b*!

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* Such, for instance, as "Lund's Easy Course," which seems to us peculiarly well adapted for elementary instruction. It is to be wished that the price (3*s*. 6*d*.) were somewhat less.

If this be correct reasoning then, of course, the following must be so :—

> " Every horse is a quadruped,
> A cow is a quadruped,
> therefore, a cow is a horse!!"

We need not point out how pernicious such loose and misty reasoning as this is to a young and untrained mind.

We should have been glad had a few of the crotchety examples in equations been omitted, for some of them seem rather out of place. Thus, the equation,

$$8\sqrt{3x} + \frac{243 + 324\sqrt{3x}}{16x - 3} = 16x + 3, \quad \text{(Ex. 94, p. 83.)}$$

is placed for solution among *simple* equations, but we cannot see what business it has there. It is in reality an equation of the *fourth* degree, and must therefore have *four* solutions and not *one* only ; and to tell the student that the solution is $x = 3$, and to take no notice of the other values of x, is to mislead him. Other examples of a like kind might easily be selected from the work.

We are surprised that the author has given an investigation of the exponential theorem which has the defect of not establishing the general *law* of the co-efficients, and which consequently leaves the student with no other grounds for his belief in that law than *induction*. This oversight is the more remarkable as the author has given good investigations of the binomial theorem, and of the expansion of $\log. (1 + n)$, quite free from this defect.

The preceding observations, (many of which, be it observed, might be applied to most of our popular Algebras,) are not to be considered a condemnation of the work. On the contrary, we think highly of it *as a whole ;* the principles are in general clearly unfolded, and are illustrated by numerous examples, which, with a few exceptions, are well selected ; and we heartily wish the work an extended circulation.

AN INTRODUCTORY TREATISE ON MENSURATION, IN THEORY AND PRACTICE, CONTAINING THE INVESTIGATION OF EVERY PRINCIPLE, AND SEVERAL IMPROVED RULES OF OPERATION. BY J. R. YOUNG, LATE PROFESSOR OF MATHEMATICS IN THE ROYAL BELFAST ACADEMICAL INSTITUTION. (London : *Simms & M'Intyre.*)

THIS treatise is from the pen of a distinguished mathematician, already favourably known as an elementary writer, and we think he has not diminished his reputation by the present work.

With the view of simplifying the solution of many problems in mensuration (generally treated by approximative rules, which, in certain cases, give very erroneous results), the author has devoted an early section (the third) of the work to an exposition of the elementary principles of logarithms and trigonometry—subjects not usually introduced into a book on Mensuration. In this departure from the beaten track we think the author has acted wisely, but we are not quite sure that he has treated these matters at sufficient length to be readily understood by most students without some aid from a master. The principles of trigonometry are explained no further than is necessary to the solution of the various cases of right-angled triangles; the solution of oblique-angled triangles not being required in the present treatise.

The other sections of the work embrace the usual range of problems in surfaces and solids, including problems on geometrical constructions, and the conic sections with the solids generated from them. Then follows a section on the application of mensuration to artificers' work, and the gauging of casks, and the book concludes with two useful five-figure tables; one of the logarithms of numbers from 1 to 10,000, and the other of *natural* sines and tangents to every degree and minute of the quadrant.

Every rule (with a few exceptions that would require the aid of the integral calculus) is accompanied by its investigation, numerous judicious notes and observations are added, some improved modes of operation are given, and the whole is illustrated by an abundance of carefully selected examples; so that a student of ordinary abilities, who shall take up this work, will find the study of mensuration to be at once agreeable and profitable, instead of being, as is too often the case, an irksome and unintellectual drudgery.

SUGGESTIONS FOR THE IMPROVEMENT OF GREEK AND LATIN COMPOSITION; FOR THE PRIVATE USE OF STUDENTS IN THE UNIVERSITY. BY THE REV. W. LINWOOD. 1845. (Oxford: *Macpherson.*)

THIS little book consists of passages from Thucydides, and Cicero's Tusculan Disputations, translated into English for the purpose of being re-translated into Greek and Latin, and then compared with the original. The author observes, " that the practice recommended in the following pages will probably be familiar to many; it does not appear, however, to have been hitherto urged with that earnestness and publicity which its efficacy deserves." Mr. Linwood has not mentioned, and we may conclude that he is not aware, that Ascham, in his " Schoolmaster," has recommended this method both at some length and with great earnestness.*

The practice of writing Greek and Latin is not necessary for the acquiring of an exact knowledge of the Greek and Latin languages, and reading the Greek and Latin authors; though it is true, that a student who has acquired the power of writing either of these languages with facility and correctness must also have acquired a greater command over them, and a nicer perception both of the meaning of single words and of idioms. But as it is the fashion to require students, both in our universities and our higher schools, to prove their skill in Greek and Latin by composition in these languages, it is of some importance to determine what is the best mode of practice for this purpose. It is the opinion of many teachers, that the present exercise system is ill adapted for teaching Greek and Latin composition; and there are good reasons for this opinion. Many teachers now reject the exercise system as a means of teaching the more advanced pupils, and adopt Ascham's plan, because they are convinced that there is no other. Mr. Linwood's experience may have some weight with those who have hitherto followed a routine without considering what they are doing. The mass of mankind, both teachers and others, are little disposed to use their own judgment; and, even if they disapprove of that which custom gives its sanction to, they are seldom bold enough to exercise their own judgment and try something new. In the matter of composition, however, it is not something new that is recommended: it is a return to a practice as old as the time of Cicero, and one which is recommended by its superiority over the present system, which is new and bad.

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* Some account of Ascham's method is contained in the Preface to an edition of the Cato Major, Lælius, &c., of Cicero, by G. Long. 1850. Whittaker, and Bell.

Mr. Linwood observes :—

> "It is to the want of a more careful and energetic habit of observation that may be traced those miserable and abortive efforts which are so often made in Greek and Latin composition: and which degrade what is in itself a most useful and elegant accomplishment into mere fruitless drivelling. It is evident that the writing of detached sentences, such as constitute the majority of school exercises, although it may teach the rules of Accidence and Syntax, can never impart a vigorous and manly style: and hence the original composition which is grounded on such a discipline is frequently either an incoherent assemblage of phrases collected from various sources and dovetailed together by the ingenuity of the pupil, or else is little more than a series of English words rendered into the Greek and Latin equivalents. But these are the legitimate fruits of such a system: from which the utmost that can be expected is the absence of grammatical inaccuracies, and where the highest praise that can be hoped for is, not to have attained excellence, but to have simply avoided the commission of mistakes."

Certain kinds of exercises are useful for teaching boys the accidence of the Greek and Latin languages. Exercises may also be useful to a certain extent in teaching the syntax; but their value for this purpose is greatly overrated. So far from being useful for teaching the right order of words, which is an important part of the Greek and Latin languages, they do little towards this end; and it is impossible that short disjointed sentences can ever serve the purpose of teaching the proper collocation of words in any language, and particularly in the Greek and Latin.

The following remarks of Mr. Linwood are just :—

> "By a constant repetition of this practice, and by continually forcing ourselves to observe, by a process such as that described, in what way the ancients were accustomed to express their ideas, we shall attain imperceptibly a most important result; namely, a *habit* of using for ourselves right words in their right places; and this without servilely degenerating into imitators and copyists. If, for example, we wish to acquire a habit of speaking a modern language, we know the best plan is to converse continually with the natives; yet we do not burden our memory by storing up each particular phrase which we may hear, but by constantly accustoming ourselves to hear correct phraseology employed by others, we acquire an *independent* habit of expressing ourselves in like manner; and this is not an effort of

memory, suggesting from recollection what is appropriate in each particular case; it is the result of a formation of habit, making the use of the language familiar to us as by a second nature."

It is true, that all languages are learned chiefly by imitation, and not by rules. We cannot learn an ancient language exactly in the same way that we learn a modern, by conversing with people who speak it; but we can apply to the learning of ancient languages the principles which are implicated in learning a modern language. And this is really done in following the method which is recommended in these "suggestions." In order to acquire an exact and critical knowledge of any tongue, we must carefully study the best writers, with such aids as can be derived from a good teacher or a good commentary, or both. Good grammars also are useful aids, when they are used as aids, and not as if they could supply the place of careful observation. But no amount of reading only can give us that power over a language which will enable us to use it with freedom, either in original composition or in translating into it from our own tongue. This power lies not in rules: it lies in habit; and the habit is got by the method which is recommended in these Suggestions.

If a person wishes to improve or to retain his familiarity with a modern language, he will find it a very useful practice to take some easy, idiomatic writer with whom he is familiar, and to read over *aloud*, occasionally, short passages. This is the next thing to hearing another person read them aloud, and it comes very near to actual conversation. Those who have tried the experiment know the value of the practice. In like manner, a diligent student who is studying a good ancient author—Cicero, for instance—will find it a very useful practice, when he has mastered the meaning of any portion, to read it over several times aloud. This practice will insensibly familiarize the student's ear to the order of the words and to the form of Cicero's sentences; and he will retain in his memory without any effort a great part of the original. If any diligent student should doubt about the value of this practice as one way of forming a habit of using right words in their right places, he may try the experiment. It will not cost much time or trouble; but he should give the practice a fair trial before he condemns it.

This suggestion is merely made as a complement to Mr. Linwood's. It is contained in what he has said, though he has not expressed it. He has enunciated the principle of *habit* as an important means, indeed as the chief means, of learning to use right words in their right places. The practice of translation and retranslation, and the comparison of our own work with the original, will not supersede the necessity of a careful and critical study of the ancient texts; but it will make this study more profitable by giving us a power over an ancient language, like that which we can acquire over a modern language; like it in kind, though it will be necessarily less perfect in degree. The practice of often reading aloud a portion of a good Greek or Latin author is only another way of training the ear and forming the *habit*. In good schools boys commit to memory considerable portions of the Latin poets and the Greek tragedians, without which practice they would never be able to write Latin and Greek verses with the ease and success with which they sometimes do it. It is not necessary to commit prose authors to memory in order to write Greek and Latin prose; but some kind of discipline must be adopted which shall produce a like *habit* to that by means of which a boy is enabled to write good verses, and this discipline is pointed out in the Suggestions and in these remarks.

UNIVERSAL GRAMMAR; OR, THE PURE SCIENCE OF LANGUAGE REVISED. FROM THE ENCYCLOPÆDIA METROPOLITANA. BY SIR JOHN STODDART, KNT. LL.D. (*Griffin*, Baker Street.).

We cordially recommend this work to the notice of instructors. No matter how great may be the talent or aptitude which they severally possess for communicating the details of the language which falls under their own immediate department, they would do well to avail themselves of the vantage ground of philosophy, and to contemplate those laws of the human mind, in conformity with which the structure of all languages must be more or less regulated. "Because," to use the words of our author, "language is the expression of human thoughts and feelings, and there are certain main channels in which human thoughts and feelings have throughout all ages necessarily flowed." Let these laws be once understood, and a higher interest than was before felt at once attaches to the study of language; the unpleasant sense of arbitrariness in structure and syntactical arrangement is, in many instances, removed; principles come to the aid of memory; and language-learning, instead of resolving itself into that mere matter of recollection of sounds, characters, and formulæ, with which some have reproached it, becomes a pursuit in the highest degree rational. Laws, based upon sound principles of mental philosophy, receive a delightful confirmation from every language added to the store, and are thus proved to be more extensive in their range than was at first anticipated; apparent anomalies vanish, and the pursuit becomes as we advance at once more easy and more fascinating. We know the prejudices entertained by the majority of our countrymen against anything that can be called or miscalled "metaphysical," and that the most nauseous thing you can offer to the English mind is a general or abstract principle; but with such a feeling instructors should have nothing to do, except as far as they can detect and counteract it.

The work, of which we can only offer a cursory notice, has been produced under favourable circumstances. It appeared many years back in its first form, and could then have only been undertaken by one well versed and deeply interested in the subject upon which it bears. Many subsequent years of study and retirement have given time for more extensive induction, for a quiet review of previous statements, and for the reception of evidence from recent authorities. The study of language, when once entered upon, we will venture to say, cannot be laid aside: whatever the immediate object of literary research may be, this must enter at least ἐν πάρεργῳ, and the philologist can scarcely, even if he would, help adding to his stores.

Sir John Stoddart's legal pursuits in early life, and the high judicial office which he subsequently held, have probably not been without their use to him as an author. A very unusual degree of accuracy in form and wording, an impartiality in balancing evidence, and a perseverance in following out his train of thought, may perhaps be in part attributed to his legal discipline. The work is absolutely free from that spirit of crazy and credulous antiquarianism which, as Gifford says,

For *ekes* and *algates* only deigns to seek,
And lives upon a *whilome* for a week.

And a strong shrewd sense has prevented its author from hobby riding with Cowper's philologist, quâ via difficilis *quaque est via nulla*, after the

Panting particle through time and space,
Started at home and hunted in the dark—
Through Gaul, through Greece, and into Noah's ark.

He is also free from irritability, an excellent sign of strength, and a rare merit in a philologist. An old dramatist has represented one of his characters as intercepting a fit of fury by reciting the alphabets of three languages. Such an exercise would have a precisely opposite effect on critical grammarians in general; rather acting like one of those jerking, monotonous, tomahawk songs, with which the Indians in their war-dance stimulate themselves for battle. However, in the volume before us there is no space wasted in ludicrous wrath about ludicrous errors; no " enjoying my charter of reprehension like my predecessors," nor, Ottoman-like, slaying of the brethren, as if the contest were for " magistrality, and not for truth : a true, scholarlike, and worthy respect for the old masters of the science of grammar is united with a perviousness to modern suggestions, and all just claims are allowed, from Apollonius of Alexandria, the chief guide of Priscian, Gaza, Linacer, and Harris, down to Pott, Grim, and Bopp, the recent German philologists. Mr. Tooke is, to the best of our recollection, the only author roughly handled, and he may fairly be said to have brought it on himself. We give the following passage—chiefly, however, as it indicates Sir John Stoddart's etymological research. Tooke has been arguing, in his sudden, venturesome manner, that words of the same origin denote the same thing.

"Let us see how this can possibly be made out. From (1) the splendour of the rising or setting sun was denominated (2) the yellow colour resembling that splendour. From the name of that colour was derived (3) that of the jaundice, ... and (4) that of the gall, which produced the jaundice. From yellow also came (5) the name given to the yolk of an egg. And, again, from this colour came (6) the name of gold. Gold, being the most precious of metals, gave its name (7) to riches in general; and particularly (8) to money. Hence were denominated all kinds of payments, whether (9) voluntary gifts, or (10) offerings, or (11) tribute, or (12) rent, or (13) fines; as well as (14) debts due on any of these accounts. In process of time, certain societies were formed and maintained by regular payments from each member, and these societies received their name (15) from this circumstance. The name was afterwards extended to societies (16) or fellowships in general, and it occasioned the peculiar designation of a build-

ing in London (17) where they assembled. Fines, in ancient times, were applied in the nature of punishment to almost all crimes, and hence their name came to signify (18) punishments in general; and particularly a barbarous mutilation (19) often used as a punishment. Lastly, the general term for punishment was naturally applied to the criminality (20) by which the punishment was occasioned. In a future part of this work I shall trace these progressive changes of signification, as they are to be found in the Mæso-Gothic; Anglo-Saxon; Alamannic; Lombardian; Precopian; Greek; Latin, old, middle, and barbarous; Suevian; Swedish; Icelandic; Russian; German; Dutch; Welsh; Italian; old and modern French; and old and modern English."

Reference is here made to a connected work on Glossology, or the Historical Relations of Languages, now in the press.

The book is by no means loaded with etymologies; they occur most frequently in what we should be disposed to consider its most interesting portion—that which relates to the accessory parts of speech, after the verbs and nouns have been treated of. With respect to such words, a living writer of eminence says, "The etymologist finds the deadest word to have been once a brilliant picture. Language is fossil poetry. As the limestone of the continent consists of infinite masses of the shells of animalcules, so language is made up of images or tropes, which now, in their secondary use, have long ceased to remind us of their poetic origin." The discovery, that many of the merely qualifying words of language were originally of higher import, has been by Turner, and others, little versed in the subject of etymology, attributed to Tooke. Now Tooke, as Sir John Stoddart suggests, was first set upon this track by a remark of Skinner's, that the English conjunction "if" was probably connected with the Anglo-Saxon gifan, to give, (*i. e.* grant, allow, or suppose). In an earlier part of his work, the author has shown that neither to Skinner nor to Tooke is the credit of this discovery due. He quotes first, B. de Spinosa's Grammar, published in 1677, "Omnes Hebrææ voces, exceptis tantum interjectionibus et conjunctionibus, et unâ aut alterâ particulâ, vim et proprietates nominas habent." Again, C. Koerber's Treatise, Jena, 1712, whose tutor, he says, told him that "most, if not all, the separate particles were, in their own nature, nouns;" that this was, indeed, "a new and unheard of hypothesis." His own words then are, "Particulæ separatæ, si non omnes, certe pleræque suâ naturâ sunt nomina." Again, Bayer, Museum Sinicum, 1730, "Eadem vox et substantivum, et adjectivum, et verbum, *et qualiscunque pars orationis fieri potest.*" And, lastly, J. D. Van Lennep, who died in 1771, in the "Analogies of the Greek language," "Ex octo igitur partibus orationis, quas vulgo statuerunt Grammatici, verbum et nomen principem locum obtinent *cum reliquæ omnes facile ad harum alterutram referri queant;*" to which he adds; "quare etiam Aristoteles aliique e veteribus duas tantum partes orationis statuerunt."

It is interesting to trace Sir John, in his derivation of "though" from "thought," through numerous approximating instances. In his compound adverbs, adverbial sentences, and words employed as adverbs: adjectives, as much, very; participles, as "scalding hot, loving jealous;" pronouns, here from he, as illic from ille; there from the, "and connected with the German der, which is a demonstrative and a relative pronoun, as well as an article," &c.; as in the Latin from is, ea, id, ibi, alibi, &c. To prove his points, a great deal of reading and research is shown, with much knowledge of kindred languages, and of our own in its various stages.

It is far easier to deal with nouns and verbs than with these apparently unimportant parts of speech, which have occasioned endless disputes among grammarians; and the numerous specimens of our language in its imperfect state give good opportunity to the antiquarian reader to account for their origin philosophically. With this in view, our author probably could not have pursued his investigations with profit so far in any other direction. We do not therefore object to the numerous English quotations in this part of the work, as the main and proper object has been perseveringly kept in view; viz., that of demonstrating the conditions of thought which must regulate the formation of language universally, and not the formation of any one individually. But of the logical precision with which, for this purpose, the arguments are worked out, we cannot, in a brief notice, give any idea.

There is no slight difficulty in accounting for the anomalies which occur in the early eras of the English language in the case of these accessory words. In the case of prepositions, for example, we look at the Paston Letters, and find such expressions as these:—Letter CX., date 1457, "Dravel, half-brother to Warren Harman, was taken *with enemies*, walking by the sea side." Letter IX., date between 1440 and 1450, "They fell *in handes* together." CLXXIV. "Fastolf, and such other as he is with him, go fast about in the country, and bear *men a-hand.*" CXXII. 1459, "I can neither be *purveyed of posts* nor of boards not yet." LXXXI. 1455, "They and their men were pilled and *spoiled out of all* their harness and horses." X. 1444, "I greet you well, and advise you to think *once of the day* of your father's counsel." We acknowledge the justness of the rule given in such cases.

> "It will generally be found that the prepositions of most frequent use are employed with the greatest latitude in the earlier stages of a language, and so continue until their equivocal signification gives rise to inconveniences, which are only to be remedied by confining them to certain forms of construction."

The same rule will apply to many adverbs. In the works of the old dramatist Peele, we find while and whilst twice used for until; and in Webster, where used for whereas, and whereas for the simple where; but instances without number might doubtless be adduced of usages which at first appear anomalous.

No man of taste, who has read any portion of the Paradise Lost, as corrected by Bentley (for to read all of it is impossible), can be ignorant of the unaccountable and almost brutish insensibility to beauty exhibited by that keen and accurate scholar. In very many of our grammarians and critics a similar apathy, though not in so great a degree, may be detected. We neither anticipate nor find this defect in one who was the intimate of Coleridge, Wordsworth, and Lamb, the friend of Scott in the dawn of his happiness and glory at Glasswade, and one of the last intellectual companions of his decline. The men of the unhappy and rigid school to which we have referred, might, perhaps, blame Stoddart for having stepped beyond the strict province of the grammarian. He would, if possible, hear the sigh condense itself into a syllable, and watch the mere effervescence of emotion crystallising itself into a recognizable form. He admits the force of a repetition with which few grammarians would sympathise:

"Oh that this too *too* solid flesh would melt!"

A repetition of which, by-the-bye, a great many instances are adduced in one of Dodsley's notes. Whatever gives force to language can scarcely be said to be unworthy of the notice of the grammarian. What energy there is in a repetition of another kind:

"I will not budge for no man's pleasure, *I*."

And what beauty in that of the adverb, when Wordsworth describes the bird as whistling "loud, *and loud*, and shrill;" or of the verb, as in these exquisite lines from an epitaph of Crashaw's:—

"Peace, good Reader, do not weep;
Peace, the lovers are asleep:
They (sweet turtles) folded lie
In the last knot that Love could tye.
Let them sleep, let them sleep on,
Till this stormy night be gone,
And the Eternal Morrow dawn."

But we must conclude, and we cannot do better than close with the summary which Sir John gives of his mode of dealing with the adverb; a fair specimen of his severe and continuous method of treating the subject before him.

"I have shown that an adverb is properly to be reckoned among the parts of speech; that it is a word added to a sentence perfect in the expression or mind of the speaker; and that it serves to modify an attributive—that is to say, primarily a verb or an adjective (taking the latter term in its widest sense), and secondarily, another adverb. I have endeavoured to reduce those modifications systematically to certain classes (a task hitherto but little thought of), referring the modification of verbs, first to the corporeal relations of place and time positive and relative, and then to the mental relations, propositional and argumentative; the former applying either to affirmation or negation, clear or doubtful, or else to interrogation and response; and the latter to the connection of propositions, particularly of the premises with the conclusion. The modifications of the adjective I have considered as affecting either their quantity or their quality. The positive quantity is either continuous or discrete; the relative admits of intension or remission: modifications of quality are also positive or relative, and the latter regard either similitude or degree. The secondary modification (viz., those of adverbs by adverbs) follows the course of the primary, and I have here noticed certain classes of words, which, as effecting no modification of an attribute, are in my opinion improperly admitted into the class of adverbs. I have next considered the methods by which the expression of the modification of attributives is effected in language, viz., by an adverbial phrase, a compound word, or a single word, which constitutes the part of speech we call an adverb. And lastly, I have shown by examples, that the words which may be employed to perform the function of adverbs, with or without inflection, are such as have been or may be employed to perform the function of any of the necessary parts of speech, viz., adjectives proper, participial and pronominal, verbs, (particularly as to the responsives Yes and No), and even nouns substantive."

ANSWERS TO THE MATHEMATICAL QUESTIONS.

Ques. 78.—*Proposed by Nemo.*

To what height may water be raised by the condensation of steam, at a place where the mercury in the barometer stands at 24 inches, allowing the vapour of the water in the receiver to have a pressure of 3 lbs. per square inch.

Answered by the Proposer, and similarly by Mr. Barnacle, Mr. Sothern, L. M. N., and T. Rule.

$$\text{Weight of a cubic inch of mercury} = \frac{13598}{1728 \times 16}\ \text{lbs.,}$$

$$\therefore\ \text{Pressure atmosphere per sq. in.} = \frac{13598 \times 24}{1728 \times 16} = 11{\cdot}8\ \text{lbs.,}$$

$$\therefore\ \text{Effective pressure atmosphere per sq. in.} = 11{\cdot}8 - 3 = 8{\cdot}8\ \text{lbs.}$$

Now the weight of a column of water 1 foot high and 1 sq. in. in the section

$$= \frac{62{\cdot}5}{144}\ \text{lbs.,}$$

$$\therefore\ \text{Column water to sustain } 8{\cdot}8 \text{ lbs. pressure per sq. in.}$$

$$= 8{\cdot}8 \div \frac{62{\cdot}5}{144} = \frac{8{\cdot}8 \times 144}{62{\cdot}5} = 20{\cdot}2\ \text{feet.}$$

Ques. 79.—*Proposed by Mr. O'Clazey, Durham.*

In a square, whose side is 4, a circle is inscribed touching the four sides, and in each of the angles thus formed, a circle is inscribed touching the former circle and the two adjacent sides of the square. Required the area of the smaller circles.

Answered by the Proposer, Mr. Sheppard, Mr. Righton, Mr. Ford, Mr. Barnacle, and Nero.

Let O be the centre of the circle, inscribed in the square A B C D, touching the side A B in H, and the side A D in P; join O A, cutting the inscribed circle in E; through E draw E F perpendicular to O A, cutting the side A B in K, and A D in F. Then E K = K H = E F = F P. Hence it follows, that the sum of the sides of the triangle A K F = A H + A P = the side of the square = 4.

$$\text{Area triangle } AKF = EK \times AE = AE^2.$$

$$\text{But } AE = OA - OE = \sqrt{8} - 2;$$

$$\therefore\ \text{Area triangle } AKF = (\sqrt{8} - 2)^2 = {\cdot}68628.$$

Now by a well known property,

$$\text{rad. inscribed circle} \times \tfrac{1}{2}\ \text{sum of the sides} = \text{area triangle};$$

hence we find, diam. circle = ·68628,

$$\therefore\ \text{area 4 small circles} = {\cdot}68628^2 \times {\cdot}7854 \times 4 = 1{\cdot}479.$$

Ques. 80.—*Proposed by Tom Tomkins.*

At a place within the tropics, it was observed that the shadow of a stick, at noon on the 21st of December, was double the length of the shadow of the same stick, at noon on the 21st of June. Required the latitude of the place of observation.

Answered by the Proposer, and similarly by Mr. Salter, Mr. Hill, and Mr. Ford.

Let A F be the stick perpendicular to the horizontal line C F B; F C its shadow on the 21st of June, and F B its shadow on the 21st of December; join A C and A B, then $\angle$ C A B = twice the inclination of the plane of the ecliptic to the plane of the equator = $46^\circ\ 54'\ 56''$; biscet F B in D and join A D, then F D = F C = D B, A D = A C, and $\angle$ A D C = $\angle$ A C B.

From the triangle A B D, we have

$$\frac{DB}{AB} = \frac{\sin.\ \angle DAB}{\sin.\ \angle ADC}$$

$$= \frac{\sin.\ \angle DAB}{\sin.\ \angle ACB}.$$

From the triangle A B C, we have

$$\frac{AB}{CB} = \frac{\sin.\ \angle ACB}{\sin.\ \angle CAB};$$

Therefore by multiplication,

$$\frac{\sin.\ DAB}{\sin.\ CAB} = \frac{DB}{CB} = \frac{1}{3},$$

$$\therefore\ \sin.\ DAB = \frac{1}{3}\sin.\ CAB,$$

whence we find $\angle$ D A B = $14^\circ\ 5'\ 30''$.

Now $\angle$ D A B = $\angle$ A C B − $\angle$ A B C = $14^\circ\ 5'\ 30''$;

but $\angle$ A C B + $\angle$ A B C = $180^\circ - 46^\circ\ 54'\ 56'' = 133^\circ\ 5'\ 4''$.

Therefore by addition and subtraction, we find

$\angle$ A C B = $73^\circ\ 35'\ 17''$, and $\angle$ A B C = $59^\circ\ 29'\ 47''$.

Here $\angle$ A B C is the altitude of the sun on the 21st of December, therefore the zenith's distance of the sun is equal to $90^\circ - 59^\circ\ 29'\ 47'' = 30^\circ\ 30'\ 13''$. But since the latitude of any place is equal to an arc of the meridian contained between the equator and the zenith, we have

$$\text{Latitude of the place} = 30^\circ\ 30'\ 13'' - 23^\circ\ 27'\ 28''$$
$$= 7^\circ\ 2'\ 45''\ \text{North}.$$

LIST OF MATHEMATICAL ANSWERS.

Theta, Earls Heaton, ans. 79, 80; T. Sothern, Burton Wood, ans. 78, 79; W. H Levy, Shelbourne, ans. 80; L. Saywell Tardebigge, ans. 78; Nero, Berwick, ans. 79, 80; L. M. N., Pembroke Dock, ans. 78, 79, 80; H. Hill, Chester, ans. 79; J. Sheppard, ans. 78, 79, 80; J. Hewit, Cambridge, ans. 79, 80; J. Salter, Durham, ans. 79 80; L. C., ans. 78, 79, 80; A. M., ans. 79, 80; J. O'Clazey, Durham, ans. 79, 80; G. Barnacle, Empingham, ans. 78, 79, 80; H. Ford, Norham, ans. 78, 79; W. Righton, ans. 79, 80; T. Collinson, Islington, ans. 79; E. J. Hickman, St Peter's School, Marlborough, ans. 80; S. Dyer, Wanstead, ans. 79; T. Rule, Durham, ans. 78, 79, 80.

NEW QUESTIONS,

To be answered in our Number for December, 1850.

Ques. 81.—*Proposed by Mr. Salter, Durham.*

The base of a right-angled triangle is 3 feet, and the perpendicular height 4 feet; it is required to divide the triangle into three equal parts by lines drawn parallel to the perpendicular.

Ques. 82.—*Proposed by Theta, Earls Heaton.*

A frustum of a cone, the radii of whose greater and lesser ends are R and *r* respectively, and whose weight is W lbs., rests upon a horizontal plane with the lesser end downwards. What weight, suspended from a point in the circumference of the greater end, will just overturn it?

Ques. 83.—*Proposed by Mr. J. Sheppard.*

The rate of interest in Savings' Banks is 2*l.* 18*s.* 4*d.* per cent. per annum. Monthly interest is allowed on deposits, and the interest is written up half-yearly and converted into principal. What sum per month must be deposited to accumulate to 120*l.* in 14 years?

STATISTICS OF PRIMARY INSTRUCTION IN PARIS.

In 1760 there were 82 parish schools, called *schools of charity*, of which 37 were for girls and 45 for boys. These were all conducted by members of religious associations.

In order to draw a comparison between the actual state of instruction in the years 1760 and 1850, it is necessary to show—first, the difference of the numbers attending schools during these periods; secondly, the amount of knowledge acquired before leaving school in 1850 as compared with 1760; we shall then be able to appreciate the development which has taken place in primary instruction.

In 1760 the number of children of both sexes attending school are supposed to have amounted to about 5000; this is merely approximative, as there are no official documents from which the true numbers can be drawn. The amount of instruction was very limited; it comprised, in the great majority of schools, reading and the repeating of prayers for the service of the mass. Instruction in writing was the privilege of a few. This is what instruction was; let us see what it is now.

In 1850 the number of primary schools maintained by the city amounts to 148; of these 75 are attended by boys and adults, and 73 by girls. Instruction, in these schools, comprises moral and religious education, reading, writing, the elements of the French language, calculation, and the legal system of weights and measures. In many of them are also taught, in addition to these subjects, music and gymnastics. The total number of pupils participating in the benefits of primary instruction amounts to 36,602; of these 31,602 are taught in public establishments maintained by the city. These 36,602 individuals are thus divided; 4460 men, 500 women, 16,828 boys from six to thirteen years of age, and 14,814 girls of the same ages as the boys.

Since 1830 those under instruction have become nearly doubled; there were, on the 30th September, 1830, 18,856 pupils; of these 10,311 were males, and 8545 were females.

The great impulse which primary instruction has received since 1830 is evidently attributable to the liberal *régime* of the law of 28th June, 1833. It is not Paris alone which has felt the influence of this new law; it has spread itself throughout the whole of France. Under its action, the number of pupils has been raised from 969,340 (the number in 1832) to 2,969,472 (the number given in official documents in the year 1840).

This new era opened up to primary instruction has been favourable not only to the increase of the number of pupils, but also to the improvement of methods of teaching and forms of organization.

The mutual* and simultaneous† methods are the only plans adopted in the schools of Paris. The individual method has entirely disappeared.

There are 87 mutual schools, which give instruction to 15,965 children and adults.

There are 61 *simultaneous schools*, which are attended by 15,673 pupils—children and adults. Of the 87 *mutual* schools, 22 are attended by adults and 65 by children from six to thirteen years of age. These last figure in the municipal budget for 15,935*l.* 18*s.* 4*d.* per annum. Of this sum 7663*l.* 14*s.* 2*d.* are for instructors, and 8272*l.* 4*s.* 2*d.* for school materials, &c. If we divide the sum of 15,935*l.* 18*s.* 4*d.* by the number of pupils attending the 65 schools, which is 13,205, we find that the mean cost of each pupil per year is 1*l.* 4*s.* 1½*d.*

The 22 *adult mutual* schools require a total expense of 1822*l.* 3*s.* 4*d.* The number of adult pupils is 2760. This gives, as the mean cost of each, about 13*s.* 6*d.*

Of the 61 *simultaneous* schools, 55 are devoted to children of both sexes. The annual expense is put down in the budget at 14,256*l.* 3*s.* 4*d.*, of which sum 5983*l.* 15*s.* are for instructors, and 8272*l.* 8*s.* 4*d.* for school materials, &c. If the whole expense be divided by 13,437, the number of children attending these schools, the mean cost of each amounts to 1*l.* 1*s.* 2*d.*

The six *adult simultaneous* schools cost annually 1457*l.* 18*s.* 4*d.* The number of adults is 2200: the mean cost of each is, therefore, 13*s.* 3*d.*

From the preceding calculations, it will be seen that the cost of educating children in the mutual schools is greater than that of those attending the simultaneous schools. The difference is, on each child, about 3*s.* per annum. This is accounted for by the fact, that the instructors of the simultaneous schools are members of religious associations (Frères et Sœurs), and receive less salaries from the state than the lay-masters and mistresses of the mutual schools. The salary of each brother is 750 francs, and of each sister 600 francs; whereas the salary of each lay-master varies from 1800 francs to 2400 francs, and that of each mistress from 1500 to 2100 francs per annum.

Notwithstanding the difference in expense between the two methods, the administration of the city of Paris has, till lately, given a preference to the schools on the mutual system. That their views have undergone a change is evident, however, from the following circumstance. By a recent deliberation of the municipal commission, two new schools in the 12*th arrondissement*, which had been set apart as mutual schools by a former decision, were now declared to be schools which were to be conducted according to the simultaneous method.

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* *Mutual Method.* By this method, the master acts to a great extent as a superintendent; the instruction is given principally by monitors. In this country, national and Lancasterian schools are mutual schools.

† *Simultaneous Method.* The instruction in schools on this method is given *directly* by the master himself, and not by the intervention of monitors. According to the French law, "every elementary school shall be divided into three great divisions, according to the proficiency of the children and the subjects to be taught."

Intelligence.

Richmond Grammar School.—On Friday, the 27th of September, a new grammar school was opened at Richmond, erected as a testimonial to the memory of the late Mr. Caren Tate, the well-known scholar, formerly head-master of the school. After the death of Mr. Tate, in 1843, his friends and pupils, being wishful to offer some enduring tribute of affection and respect to his memory, subscribed a sum of money for this purpose, amounting to 1100*l.* At a meeting of the subscribers it was resolved that this sum should be expended in building a new school, the old one being in a dilapidated state. A committee was formed for the purpose of carrying out this design; the Earl of Zetland being chairman, and Mr. Andrews, of York, was selected as the architect.

The 27th of September (being the anniversary of the election of Mr. Tate to the office of head-master) was selected as the day for the ceremony of opening the school, and the subscribers and friends were invited to attend. There were present on the occasion his Grace the Archbishop of York (a quondam pupil), the Lord Bishop of Ripon, the Earl of Zetland, the High Sheriff of the county, the Lord Lieutenant of the county, and eight clergymen and gentlemen, pupils and friends.

The following inscription is on the porch of the new school, explaining the circumstances of its erection:—"In memoriam Jacobi Tate, A.M., Scholæ Richmondiensis per annos xxxvii. summa cum laude Presidis, postea Eccles. diu Pauli ap. Londinenses Canonici Residentiarii, hoc ædificium juventuti erudiendæ dedicandum discipuli et amici venerationis ergo struendum curaverunt, anno sacro M.DCCC.XLIX."

Public Nurseries.—A public nursery has recently been established in Nassau Street, Mary-le-bone, for the purpose of receiving the children of the married industrious poor during the working-hours of the day. It has been in operation for more than three months, with considerable success. The objects are explained in a pamphlet, entitled, "Public Nurseries," published by the projectors. The following are the regulations:—1. Every mother applying for the admission of her child must obtain a recommendation from the clergyman of the parish or a respectable householder of the district in which she resides. Papers of the form required may be had at the nursery.—2. No child will be admitted unless it has been vaccinated and is in a state of health.—3. Children will be received at any age between one month and three years.—4. Threepence a day will be charged for the care and maintenance of each child, fourpence for two of the same family; and it is required that the money be brought with the child every morning. Otherwise the matron has strict orders to refuse admission.—5. The child's clothing must be perfectly clean. All extra linen is provided by the nursery.—6. Unweaned children may be nursed at the institution by their mothers during the day.

To Correspondents.

G. M. S.—The institution referred to is for Dissenters.

W. D.—Taylor's Edition of Goldsmith, 6*s.*, or Gleig's, 6*s.* 6*d.*

I. A. M.—Scripture History, Old Testament, 2*s.* *Rivingtons.*

A. M.—There is no other work on the Subject.

Delta.—Trollope's Questions and answers on the Liturgy, 3*s.* Davys's nversations on the Liturgy, 5*d.* S. P. C. K.

Battersea Schoolmaster's communication hardly suits our pages.

EXTRACTS FROM THE PRIVATE DIARY OF THE MASTER OF A LONDON RAGGED SCHOOL.

[This diary was not written for publication: it contains, however, told in a quaint way, much that is interesting and instructive.]

No. 6.

THE LITERATURE OF OUR ALLEY.

These Irish are not a reading people: one would think that in this age of literary institutes and popular knowledge, that is, of knowledge made insipid, some of my acquaintances of the alley might have at least a little predilection for books; but I have not been able to discover any such among them. They are, however, generally well informed as to the leading news of the day; they hear the news of Ireland and the police news, at the ale shops. News of this kind quickly passes, by word of mouth, from one to another. I was ten months amongst these people before I met with a newspaper, and that was one of the cheap Sunday papers; I also on one occasion saw the "Times" in our alley (it was the day after the death of Sir Robert Peel was announced); I found one of my pupils, a grown-up girl, reading it to her father, as I passed their door. I have had, on several occasions, tracts shown to me that had been left by the *distributors*. Those of them which I have read, were namby-pamby things, not at all adapted to the people; indeed, it would be difficult to find in London the class to which these essayists address themselves. These tracts can only be understood thoroughly by a backsliding class leader, or by one who is thoroughly acquainted with the peculiar style of the conventicle. . . . "Tim" gets into disgrace and his mother pleads for him. "By the powers, he aint so very bad, our Tim; he read every bit of this *thract* to the tother woman and me last night; the carpinter left it; p'raps it isn't much he knows, how should he? Tim's as good as he—it's in schooling I mane—and p'raps you don't know the quality that I belongs to? Sorra a bit of any of our family was ever printiced. Oh, holy mother! printice the son of ——! Do you know Captain ——, and Captain ——? Och, how I hates to name the great paple he belongs to, and to see him there without a shoe to his fut, or a cap to his head, and he a making for the gallows." The good woman might have continued in this strain, but the conversation was apparently tiresome to her hopeful son, which he signified by giving a series of shrill whistles, with the aid of his fingers, which he placed in his mouth in the most approved manner. . . . . Their spiritual advisers dislike these tracts very much, and they never allow an opportunity to escape without denouncing them. This has had some effect in stopping the circulation of such papers; but on the whole, I think, the people dislike them from personal considerations. They have no idea of reading themselves a lecture wherein all the pains of hell are clearly set forth as their due; the more so, as they do not believe a word that is so written, and they are therefore neither edified nor excited by such reading. The majority of the inhabitants of our alley firmly believe, that the mere fact of having been born in Ireland, is in itself a sufficient passport to heaven. One of their own confessors told me, that this was a delusion which he had much trouble to combat. I have heard it stated, that "tracts" would not "go down" in our alley, because the people could not read them. This is not the reason. I have seen tracts refused, or taken reluctantly, by persons who were perfectly able to read and understand them too. They are prejudiced against that class of writings, and it will take time and judgment to remove that prejudice; the tract-system may succeed when it ceases to be polemical, and not till then has it any chance. . . . .

It was thought proper to change the ordinary reading books in our school, for a short time, and I introduced instead, the little paper-covered books, published by the Society for promoting Christian Knowledge, When the books were put into the boys' hands, I overheard a lad say to his neighbour, "Here's a precious go; he takes the books away to give us *tracts*." . . . .

The most of the inhabitants of our alley are possessed of Bibles, which they do not use, and many of them have copies of the Book of Common Prayer. They keep these books because they are fond of having a little property, and because the books are not easily sold, as most of them are branded,—but they do not use these books; having been presented to them, they keep them. Numbers possess the rituals of their own church, and those which I have seen had the appearance of being much used. I speak now of the better class; amongst us are many who do not attend any Christian observances, *except that of going to confession every two or three years*, or oftener, if they have some crime on their consciences. . . . .

It is worthy of remark, that these very people who never think of looking at a newspaper, although they can read, nor of going to church, unless their "conscience be afraid," nor of politics—true to their Celtic nature—unless they are led by an Agitator—are also true in this land of their adoption to another national characteristic, their love of ballad poetry. Macaulay, referring to Ireland in the days of James the First, says:—"The genius with which her aboriginal inhabitants were largely endowed, showed itself as yet only in ballads which, wild and rugged as they were, seemed to the judging eye of Spenser to contain a portion of the pure gold of poetry." This love of poetry, such as it is, and of song, is as marked a peculiarity of the Irish in the reign of Queen Victoria, and it is the only one which speaks anything for the genius of that portion of them who reside in our alley. It is only to be lamented that their ballads have been so much contaminated by the vices of the city, that I fear they have had the very opposite of a refining influence. Poetry, the language of the heart and of nature, attuned to harmony, could not fail, when studied and enjoyed, to refine, if it did not inspire its admirers; and it has had some such effect on the Irish people; it has operated for several ages as an intellectual stimulant, and it is strange, that a people who have produced so much genius, should be so prostrate. In the intellectual as in the material world decay seems to be attended by a mysterious phosphorescence;—a nation perishing in the face of Europe continues to supply her share of names that are illustrious. . . . . It is very seldom that they read; but if you find any one reading, ten chances to one it is a ballad or a dying speech which occupies the attention; and so important did this circumstance appear to me to be, that I carefully, from time to time, procured a copy of every ballad which I found amongst them; and it will be seen, that their *literature*, is exceedingly instructive, inasmuch as it invariably represents correctly their feelings and habits of thinking. . . . . I ask not who are the parties accountable for the production of these ballads; the publishers of them pursue their calling, I have no doubt, as if it were a legitimate and praiseworthy avocation; those who write them are either of the class to whom they are addressed, or candidates for admission therein. But it is worth knowing, whether that functionary who acts the part of censor to dramatic literature, has not the power of extending his supervision to that of the alleys. In the olden time, the vices or virtues of the upper classes took a much longer time to affect the lower than in our day. In this age of cheap printing and publishing, the tradesman seizes at once on what is likely to pay him best; and, if an obscene or objectionable song is produced at a fashionable *night-house*, it is no sooner approved of than it is forthwith hawked about the courts. Take "Sam Hall," for instance: it had not ceased to be popular at ——, before it was a great favourite in our alley. I never could see what recommended this ditty, unless it were that it sneered at religion and capital punishments. The easy way in which the sheriff is described as being "gallows glum" when he spoke of "kingdom come," and the nonchalance with which the ascent of the scaffold at Tyburn is given, had also its effect in making this doggrel acceptable. As a specimen, I quote the last verse.

"And now I goes up stairs,
Goes up stairs,
And now I goes up stairs—
Here's an end to all my cares,
So tip us all your prayers.
Bless his eyes"—(*i. e. the hangman's*).

That Sam should bless any part of the hangman is remarkable; but not more so than that Turpin had also an affection for the *person*, who officiated in his case.

"Now Turpin is caught, and tried and cast,
And for a game-cock must die at last;
One hundred pounds when he did die,
He left Jack Ketch for a legacy."

In a ballad, descriptive of the abduction of a Lady Castle, seven men are disposed of in one line:—

"And they're to be hanged all in a row,
For the Earl of Castle's Lady O."

According to another of the same sort, a noble lord graces the gallows occasionally:—

"The nobleman was taken, and the gallows was his doom,
For ending pretty Mary who scarce attained her bloom;
Young Henry, so dejected, he wander'd till he died,
Broken-hearted for poor Mary who died in the silvery tide."

The melancholy story of "George Barnwell," is scarcely to be recognised in the Alley Version :—

"At her fate no one lamented,
But everybody pitied hisen—
When out comes the cruel hangman
To put the cord about his wizzen.
Fol de riddle.
The merchant's darter died soon arter,
Tears she shed—but spoke no words;
So all young men, I pray, take warning."

The next is more cheerful; it informs us of a "lady gay and free," who commits a murder, and is in consequence made an officer in the Royal Navy :—

"When the captain com'd for to hear on't,
He werry much applauded her for what she'd done;
And quickly made her first lieutenant
Of the gallant Thunder-bomb."

To poison one's sweetheart because she danced with another man, is not held highly objectionable, if the distracted swain has courage enough to drink of the same potion :—

"And I have drunk the same, my jewel,
I soon shall die as well as thee;
When in each other's arms they died.
Young men beware of jealousy."

A Sligo advocate is reported to have expressed himself thus :—

"To hang a man for *love*, it is murder do you see.
Let's save the life of Reily, and banish'd let him be."

To an Irishman there is much that is comforting in feeling assured, that after death his body will be properly waked and buried;—the ballads abound in allusions of this kind. One Hegan, who was executed, requests :—

"There is one thing more, which I beg of my friends,
To *wake* me in Bloomfield one night by themselves,
And bury my body in Mary-le-Mould;
And I hope that the great God will pardon my soul."

Of the dearest friends of Terry O'Rann, it is said :—

"Their hearts did ache attendin' his wake."

The women are sometimes as particular as the men in giving directions for their funerals :—

"Grant me one favour, that's all I crave,
Eight pretty maidens let me have,
Drest all in white as a comely show,
To carry me to the grave below.
Now all young girls, I hope, on earth,
Will be warned by my untimely death."

. . . .

A girl, whose lover was drowned at sea, is very pathetic on the circumstance, that he is *now* in the company of *fishes*, and that "*His body rolls in motion.*" . . . .

Some of the ballads warn the fair sex against flattery; and not a few of them encourage the pretty ones to look out for good matches.

"So its all pretty maidens attention,
No matter how poor you may be;
There is many a poor girl as handsome,
As those with a large property."

A lad in a "blue jacket" succeeded directly that he told this piece of news;—

"My uncle has died and left me store of gold,
Twenty thousand bright guineas and houses untold."

Yet humble suitors are often strongly recommended.

"So come all you pretty maidens, wherever you may be,
A collier lad do not despise in any degree;
For if that you do use them well, they'll do the same to ye.
There's none in this world like a pit boy for me."

It would appear that *great* men are tempted by money:—

"Vy Mister Vild loved Mrs. Sheppard
Is a secret to be told;
It seems he know'd—although she didn't,
Some day she'd have lots of gold.

He didn't make no love-sick speeches,
To gain her heart, in accents big;
But straightway went and hanged her husband,
Then made her only son a prig."

And it is intimated that this son had a useful wife and became famous:—

"His wife was with him in the prison,
A circumstance that did him please;
For to escape right through the window
She tore and twisted her chemise."

. . . . .

Now he lives renown'd in story,
In three volumes is his life."

On the whole the ballads take it for granted, that the married state is a happy one, *when no blows are interchanged.* A young woman who entered into it at sixteen, gives assurance of her blissfulness:—

"We never had no words or blows in any degree."

. . . . . .

Amidst their connubial jars they have sometimes prospective ideas of happiness. A husband, speaking of his wife, says:—

"She told me right bang to my head,
She vhish'd I'd been choked by the grub;

For she'd marry Joe vhen I vos dead,
Vith the blunt from the burial club."

Another person dissatisfied with his wife's conduct, takes a less praiseworthy way of curing the evil than by merely complaining to the world; he determines to quit the mundane scene:—

"Prussic acid!—Prussic acid! Right down my throat I'll tuck it,
For I know I ne'er shall be at ease until I kick the bucket.
This epitaph, I'll write myself—'Here lies poor Toby Tellpit;
The reason why, this poor chap died, 'twas cos he couldn't help it.'"

Judging from the ballads, one would be led to the conclusion, that proposals of marriage did not usually come from the men: such phrases as the following occur frequently:—

"Dear bachelors now be so good,
Do take me." . . . . .

And in another song,

"This sudden blunt refusal with her did not agree;"

And a widow encouragingly says,

". . . marry me, *dont be afraid.*"

The ladies are represented as being capricious withal, and several of the songs are the plaints of rejected lovers. The description of this fair one is grand:—

"Her golden hair in ringlets hung, her dress was spangled o'er,
Rings on every finger brought from a foreign shore.
'Twould entice both kings and princes, so costly she was drest,
And she far excels fair Venus, she's the Lily of the West."

The possession of so much beauty and fine clothing was, of course, disputed by "a lord of high degree," who was favoured by the lady; but that preference was somewhat dangerous, for farther on our hero says:—

"I walked up to my rival with my dagger in my hand."

Then follows a trial, and an acquittal.

"A flaw was in the indictment found, which quickly set me free."

. . . .

If we are to believe the ballads, those girls who receive their education gratuitously, are not much improved thereby:—

"I'm a charity girl, as you may see,
You'd like to know perhaps who I be;
If you will listen to my rhyme,
I'll let you know all in good time.
My mother lives down in Pot Alley,
The boys all call me Charming Sally.
Be their delight I always shall,
While I'm a flare-up charity girl."

Nor is the Charity Boy well commended:—

"No doubt you wonders who I is,
And at my figger you may quizz;
At once your doubts then to destroy,
I'm Bobby Miles the charity boy.
Though some folks says as I'm a fool,
I'm a teacher in the charity school.
And 'cause I'm six feet to view,
I'm reckon'd the head scholar too.
Oh! vot a pleasure larning is!
For, though the folks may jeer and quiz,
I'm mammy's pet and daddy's joy,
So vot d'ye think of the charity boy?

So thus you see how blest I are;
In larning I bangs Byron far,
With a mind content where'er I goes,
And dress'd in these here handsome clo'es,
I ever bless the fate, I'm sure,
Vhich made me humble, made me poor;
For oh, you can't conceive the joy,
It is to be a charity boy."

(*To be continued.*)

ON TEACHING ARITHMETIC.

MENTAL CALCULATION.

THIRD LESSON.

Addition and Subtraction of the Number Two.

1. This exercise may be taught with the coloured cubes or the ball frame. If with the former, twelve cubes will be required, ten of one colour, and two of another. If the ball-frame be employed, the ten balls on the first wire, and two of those on the second wire, are all that are necessary.

2. One ball and two balls are three balls.
Two balls and two balls are four balls.
Three balls and two balls are five balls:—
And so on till
Eight balls and two balls are ten balls.

3. Ten balls are equal to eight balls and two balls.
Nine balls are equal to seven balls and two balls.
Eight balls are equal to six balls and two balls:—
And so on till
Three balls are equal to one ball and two balls.

4. The next step is to require some child to go through the same exercise, by means of dots or lines on the black board. At the end of each step let him repeat what he has done. Thus, when he has performed the first step, let him say, one dot plus two dots are three dots; and so on to the end of the exercise. When the whole has been gone through, let some other child repeat the second part of this lesson. Thus, ten lines are equal to eight lines plus two lines; * or ten are equal to two plus eight. The following is the method of writing this lesson on the black board:—

---

* *Lines* or *dots*, as the case may be

● + ● ● = ● ● ●

● ● + ● ● = ● ● ● ●

● ● ● + ● ● = ● ● ● ● ●

as far as

● ● ● ● ● ● ● ● + ● ● = ● ● ● ● ● ● ● ● ● ●

When the preceding exercises have been properly mastered, then let each child perform the same combinations on his slate. This will tend to more strongly impress on the minds of the children the important truths taught in this lesson.

Subtraction.

1. The lesson on addition is combined with that on subtraction; thus:—

One cube and two cubes are three cubes; two cubes from three cubes and one cube remains.

Two cubes and two cubes are four cubes; two cubes from four cubes and two cubes remain.

And so on till

Eight cubes and two cubes are ten cubes; two cubes from ten cubes, and eight cubes remain.

2. This exercise may also be taught, if considered necessary, in the following manner;—

One cube and two cubes are three cubes; three cubes *less* two cubes are one cube.

Two cubes and two cubes are four cubes; four cubes *less* two cubes are two cubes.

And so on till

Eight cubes and two cubes are ten cubes; ten cubes *less* two cubes are eight cubes.

3. The subtraction may be taught separately; thus:—

Ten cubes less two cubes are eight cubes,

or

Ten cubes less two cubes, and eight cubes remain:—

And so on till

Two cubes less two cubes and nothing remains.

4. The latter part of this exercise is to be gone over on the black board, as recommended in addition; thus:—

● ● ● ● ● ● ● ● ● ● − ● ● = ● ● ● ● ● ● ● ●

● ● ● ● ● ● ● ● ● − ● ● = ● ● ● ● ● ● ●

● ● ● ● ● ● ● ● − ● ● = ● ● ● ● ● ●

And so on till

● ● − ● ● = 0

Comparison of Numbers.

1. Three balls are two balls ***more*** than one ball.
Four balls are two balls ***more*** than two balls.
Five balls are two balls ***more*** than three balls :—
And so on till
Ten balls are two balls ***more*** than eight balls.
2. One ball is two balls ***less*** than three balls.
Two balls are two balls ***less*** than four balls.
Three balls are two balls ***less*** than five balls :—
And so on till
Eight balls are two balls ***less*** than ten balls.

FOURTH LESSON.

Addition and Subtraction with the number Three.

FIFTH LESSON.

Addition and Subtraction with the number Four.

SIXTH LESSON.

Addition and Subtraction with the number Five.

The same plans are to be observed in teaching to add and subtract by 3, 4, and 5, as are laid down for the addition and subtraction by 2.

3. A useful and highly important exercise is to accustom children to the different ways of decomposing a number. For instance, the decomposition of the numbers from two to ten, may be shown by the teacher on the black board, and then by the children on their slates, in this manner :—

● ● = ● + ●

● ● ● = ● + ● + ● or ● ● ● = ● + ● ● or ● ● + ●

And so on,

4. Suppose we wished them to decompose the number seven into two parts. It may be done in various ways, thus :—

● ● ● ● ● ● ● = ● ● ● ● ● ● + ●

● ● ● ● ● ● ● = ● ● ● ● ● + ● ●

● ● ● ● ● ● ● = ● ● ● ● + ● ● ●

● ● ● ● ● ● ● = ● ● ● + ● ● ● ●

● ● ● ● ● ● ● = ● ● + ● ● ● ● ●

● ● ● ● ● ● ● = ● + ● ● ● ● ● ●

Here it is evident to the child, that 6 + 1, and 1 + 6, are equal; that 5 + 2, and 2 + 5, are equal; and so on with any of the other numbers. The children should be accustomed to perform exercises of this description, as a knowledge of the composition of numbers will materially assist them in all their future calculations.

QUESTIONS.

Addition.

(*a*) One button and two buttons. Three slates and two slates. Seven pencils and two pencils. Five hats and two hats. Eight pennies and two pennies. And so on.

(*b*) Four and two are how many? What are two plus two? The sum of seven and two. What number will six and two make? And so on.

(*c*) Nine are seven and how many more? Ten are equal to eight, and what number? Three are one, and how many besides? And so on.

Subtraction.

(*a*) Take two shillings from three shillings, what is left? John had ten marbles, he gave away two, what remained? Nine pence less two pence is how much? Ten pens less two pens are how many? And so on.

(*b*) Take two from five. Six less two are equal to what number? Nine minus two are how many? Two from five, and how many remain? And so on.

Write such expressions as the following on the black board:—

2 + 3; 3 − 1; 5 + 2; 6 − 2; 8 + 2; and so on.

Comparison of Numbers.

(*a*) How much is seven more than five? Six are how many more than four? How many more than eight is the number ten?

(*b*) What number is two more than seven? What number is two greater than three? What number is two above six? What number is two less than ten? What number is two less than five? And so on.

(*c*) Eight are two more than what number? Seven are two less than what number? Seven are two above what number? Ten are two greater than what number? Eight are two less than what number? And so on.

Decomposition of Numbers.

What two numbers compose seven?

Name two other numbers which make seven.

I have two numbers the sum of which equals nine: find these two numbers.

What are the two numbers into which we can decompose ten?

Show that five and three are equal to six and two.

Decompose nine into two parts, one of which shall be three. Show it on the black board.

Decompose eight into three parts, and let one of these parts be equal to six.

Name two numbers making ten, and let one of them not be greater than four.

Name three numbers which shall be equal to nine, and let none of them be greater than four.

What five numbers added together are equal to eight?

General Questions:—

1. What number is found between seven and five?
2. How many times must one be repeated to make ten?
3. If John has three marbles in one pocket, and five in the other, how many has he altogether?
4. If I have nine shillings, and give five shillings for a jacket; what sum will remain?
5. What must I take from eight guineas to leave three?
6. William had seven marbles; he gave away three and two; how many were left?
7. What will remain out of ten pence if I pay four pence for tea, three pence for sugar, and one penny for pepper?
8. How many legs have one chair and one wheelbarrow?
9. I put nine cubes in three rows: there are three in the first row, and two in the second; how many are there in the third row?
10. If a hen has five chickens, and the rats eat three of them, how many will be left?
11. How many pairs of tongs must be put together to make ten legs?
12. One hen had three chickens, and another hen had five chickens. The one that had three chickens died, and her chickens went with the other hen; how many chickens had the other hen after that?
13. A little boy is ten years of age; how old was he six years ago?
14. Ten balls are on a wire, and all are red but three; how many red ones are there?
15. How many legs have two cats and one bird?
16. You borrow eight pence, and pay three pence; how much do you still owe?
17. Peter has marbles in both pockets; in one pocket he has ten, in the other four; how many has he in one pocket more than in the other?
18. John was born five years after James; how old will James be when John is three years old?
19. Ten persons are riding in a railway carriage; three get out at one station, and four at another; how many remain?
20. If you have nine pins, and three and two have no heads on them, how many have heads?
21. If there are ten books in a pile, and you take one from the top and one from the bottom, how many will be left?
22. There are seven children in a house; one goes to one school, and three go to another school; how many remain at home?

ON THE CRUDE-FORM METHOD OF TEACHING THE CLASSICAL LANGUAGES.

As a matter of prudence we think it right to conciliate the attention of those who can feel little esteem for an object that has none of the moss of antiquity about it, by stating at the outset that upon the system of crude forms every Sanskrit grammar is constructed.

"Inflexion," says Professor Wilson, (§ 48 of his grammar, 2nd ed.) "whether of declension or conjugation, is contrived by the Sanskrit grammarians on the same principle. It consists of two parts: 1, The *Anga*, 'body,' or inflective base, that is, the word itself; and, 2, of certain particles, which, being attached to the base, complete the inflected word." He goes on to say, at the latter part of § 51, "There is but one general declension in Sanskrit grammar;" and though it is convenient to divide nouns into classes, yet even then, he adds, "No arrangement admits of more ready reference than that which classes them according to their final letters."

Again, in § 167, he founds the system of conjugation on the "*dhatu*," or "crude verb;" observing also, in § 171, that, "The verb in its inflected form is composed of two elements: 1, The *Anga* or 'base,' the modified verb to which the inflections are subjoined; and, 2, certain letters or syllables which constitute the inflectional terminations and are subjoined to the base."

The exhibition of the Greek and Latin languages upon the crude-form system, is in perfect accordance with the passages we have quoted from Professor Wilson's grammar; and with the remarks of Bopp in his Vergleichende Grammatik, § 112, &c.

The first proposal in print to apply the principle to the analysis of the classical languages was made, we believe, in a review of Zumpt's Latin grammar in the first number of the Journal of Education, published by the Society for the Diffusion of Useful Knowledge in 1830 (pp. 98—100, and 105). The system had been previously expounded in the classical lecture-rooms of the University of London (now University College), the term crude-form being suggested by the late Dr. Rosen. In the year 1836 was published "The Bromsgrove Latin Grammar, by the Rev. G. A. Jacob, M.A. (late scholar and tutor of Worcester College, Oxford)," which is drawn up in a great measure, but far from uniformly, upon the crude-form system. Mr. Jacob subsequently published a Greek grammar upon the same plan. A more copious Latin grammar on the system of crude forms, by Mr. Key, of University College, was printed in the years 1843—46. In the preface to this grammar Mr. Key announced his intention to prepare a dictionary upon the same principle, which was stated in the advertising column of our last number to be nearly ready for publication. Lastly, school-books of instruction on the same system for Greek and Latin have been published by the late Dr. Alex. Allen, Dr. William Smith, Mr. Hardy, and Mr. Robson.

We now proceed to give a more distinct exposition of the system of crude forms, and for the sake of brevity we shall for the most part limit our observations to the Latin language.

In the ordinary grammars it is the practice to start from the nominative of a noun, and from the infinitive or first person of the present indicative of a verb. Now the nominative of a noun is something more than the naked word, as it also expresses a certain relation to the sentence. So, again, the first person of a verb includes in its termination a representative of the pronoun "I." The infinitive mood in like manner presents to us a suffix, by means of which the notion of the verb is expressed in the form of an abstract substantive. Thus, in every one of these three cases we have some foreign matter as it were added to the pure metal.

Now the principle of the crude-form system is to get rid of this foreign matter, and thus to exhibit the simplest form of a word; or, as Bopp expresses it, die Grund-form, die nackte Wortgestalt. But it would be thought a false step to introduce that which, though in a certain sense more true and more philosophical, would involve a complicated process of analysis. To such an objection the supporters of the crude-form system answer that their principles are not only true, but at the same time are recommended by extreme simplicity. Thus they affirm, with Professor Wilson, that on the crude-form system there is at bottom but one declension and but one conjugation; and if for some purposes it is still convenient to divide nouns and verbs into classes, these classes depend upon one simple and unvarying rule, viz., the characteristic or last letter.

But examples will best explain what is meant. In the fourth declension, that of *gradus* for example, the same letters down to the vowel *u* inclusive, appear in every case both of the singular and plural, except in the dative and ablative of the latter, and the doubt which this one exception might suggest is removed by the occurrence of such forms as *verubus, acubus.* From the fact of the five letters *gradu* being thus common to all the inflected forms, it becomes to some extent probable that the several ideas of number and case are distinguished by the letters which follow *gradu.* Similarly in the fifth declension, as that of *dies*, the three letters *die*, being constant, tend to a similar conclusion. In the third declension, nouns, such as *turris*, *avis*, differ much in several of the case-endings from *rex, homo, æstas.* The former exhibit an *i* in nearly every case; for we have *turrim* in the acc. singular, and *turrīs, avīs,* as well as *turres, aves* in the acc. plural; *turri, avi,* as well as *turre, ave,* in the abl. sing. Nay, even a plural nom. such as *turrīs*, is well established, as an archaic variety. Thus an *i* presents itself in every case of both numbers. On the other hand, we never meet with an acc. *regim,* nor with such plural cases as *regīs*, or *regium.* Under these circumstances there are strong reasons for separating the consideration of such words as *rex* from those nouns which have a nominative in *is.* Looking then to such nouns as *turris*, we find *turri* in every case. To proceed: in the nouns of the first declension, as *musa*, an *a* is traceable through every case of both numbers, if we include in our view such datives as *equabus*, *duabus*, *ambabus*, and the Greek nouns, *μουσαις*, &c. In the nouns so far discussed, the parts common to every case are *gradu*, *die*, *avi*, *musa;* and so we have come across classes which end in four of the five Latin vowels. There remains one declension, the second, and one vowel, viz. *o*. Now the nouns of this declension exhibit the vowel in question in the dat. and abl. of the singular, in the gen. and acc. of the plural, as *domino*, *dominorum*, *dominos*. The corresponding Greek declension helps us out in many of the other cases, as δουλος, δουλοιο or δουλου, δουλον, δουλοι, δουλοις. But we need not depend on the Greek alone. Cicero also wrote, *servos*, *servom*; rather than *servus*, *servum*; and so in all words where the ordinary ending of these cases would give us the combination *-vus*, *-uum*. Again, Cicero's genitive of *qui* was *quo-ius*, not *cujus*. So, also, we may fairly assume that *nullius* with its long *i* is a contraction of *nullo-ius*, a genitive which bears a marked affinity in its termination to the Homeric genitives such as λογοιο. We may the more safely assume that *nullius* is only a reduced form of *nulloius*, because a long *i* in Latin often corresponds to the diphthong *οι* of the Greek, as in *domini* (nom. pl.) *dominis*, compared to δουλοι, δουλοις. In the nom. pl. Terence wrote *Adelphoe*, and *oloe* is said to have been used as an archaic form for *illi*. At any rate, as regards the abl. pl., Festus says: *aboloes* dicebant pro *ab illis*. Thus the sing. vocative alone in this declension presents any difficulty. But the change to a short *e* is seen even in the nom., as in *ille*, *iste*, *ipse*; and that the last of these grew out of an old *ipsos* is pretty well established by the fact that the old writers give us a nom. *ipsus*. In truth, it is nearly a law of the Latin, and other languages, that any short final vowel becomes reduced to a short *e*. Thus, *magis*, *scriberis*, *scripserunt*, when deprived of the final consonants, become at once *mage*, *scribere*, *scripsere*. From all these facts it is inferred that in the second declension the part essential to the noun as opposed to case-endings, terminates in the vowel *o*. There remains that portion of the third declension which differs in the mode of forming the cases from *avis*. Examples of such nouns are, if we define them by their nominatives, *rex*, *nux*, *lapis*, *paries*, *virtus*, *ætas*, *pater*, *consul*, *hiemps*, *ratio*, *homo*, *pulvis*, &c. Upon any grammatical system such words present anomalies in the nominative case. In the other, or so-called oblique cases, the difficulties are few; and it will be found that the essential part of these words ends in a consonant, viz. *reg*, *nuc*, *lapid*, *pariet*, *virtut*, *ætat*, *hiem*, *pater*, *consul*, *ratiōn*, *homŏn*, *pulvis*. The modification or loss of the final consonant which ensues in the first seven of these nouns, on the addition of an *s* to form the nominative, is nearly parallel to what happens in the formation of the perfect tenses, *rexi*, *duxi*, *divisi*, *misi*, *sumpsi*; and this was to be expected, as the same consonants are brought into juxta-position. As regards *pulvis*, *cucumis*, and *cinis*, the final *s* of the nominatives in reality performs a double office. In other words, *pulviss* would have been theoretically a more correct form; and hence it is that the last syllable of this nominative is at times found long, as in Virg. Æn. I. 478—et versa pulvīs inscribitur hasta. That the base of *pulvis* must put in a claim to an *s* is proved by the diminutive *pulvisculus*, as compared with *navicula*, *canicula*, *fraterculus*. The oblique cases *pulverem*, *pulveris*, &c. confirm this, for the syllable *er* in these words represents the *is* of the base, just as *er* in *scripserunt* corresponds to the middle syllable *is* of *scripsistis*. The change of *s* between vowels into *r* is familiar to every Latin scholar. It must also be admitted, on consideration, that while an *i* is the vowel which the idiom of the language prefers before *s*, a short *e* is all but required before *r*.

With regard to the absolute disappearance of the final *s* in the nominatives *pater*, *consul*, *ratio*, *homo*, and the loss in addition of a liquid from the end of the last pair of words, justice could not be done to the argument except at much greater space than can be now found. An early opportunity shall be taken to supply this and some other deficiencies. We will also then give our reasons for saying of the Latin language what Professor Wilson has said of the Sanskrit, that the system of crude forms virtually reduces all the declensions to one single type.

We will stop for the present with an anticipation of an objection that may probably suggest itself to some readers. Even if we admit your system to be founded on the firmest basis of philological truth, it requires much complicated reasoning to prove its truth, and for that reason would be found utterly impracticable in the instruction of the young. The answer is simple. The proofs are for the learned alone. The business of the pupil is to learn the contrary process, by which from the bare word or crude form, the so-called cases are formed by the addition of syllables or letters. This process is far easier than that put forward in the old grammars. Thus the Latin words for "king," "bird," "thing," "wing," "slave," "step," are presented for the first time to the beginner in the forms *reg*, *avi*, *re*, *ala*, *servo*, *gradu*. From these he is taught to build up the different cases. In this process he has at once an advantage over those who follow the old course. He can never be at a loss for the declension, as the last letter is an invariable guide. Nay, he may throw aside all consideration of the order in which the declensions follow, as the terms "consonant declension," "*i* declension," &c., are at once simple and sufficient. Thus he is saved from many traps which are set for one who uses the Eton grammar. For example, the words *puer*, *linter*, *pater*, are only deceitful guides to the declension until we know some other case or cases; whereas the crude forms *puero*, *linteri*, *pater*, at once give a direction which cannot be mistaken. A treacherous similarity exists between *equus* and *senatus*; but there is no chance of the pupil referring to the same declensions *equo* and *senatu*.

[We have had several applications as to the meaning and alleged advantages of the *crude-form* system in Latin and Greek Grammar. Moreover, the papers on Latin Etymology which have appeared in our pages contain a running allusion to the principle. In order, therefore, to meet the wishes of our readers, we have obtained the foregoing statement from a warm supporter of the system. It is for the learned and experienced teacher to form a judgment on its merits.]

ON THE PERVERSION AND CORRUPTION OF WORDS.

We have rarely met with a passage which took us more by surprise than the following one in Locke's Essay (b. iii. c. 9).

"I must confess, that when I first began this discourse of the understanding, and a good while after, *I had not the least thought that any consideration of words was at all necessary to it*; but when, having passed over the original and composition of our ideas, I began to examine the extent and certainty of our knowledge, I found that it had so near a connection with words, that, unless their force and manner of signification were first well observed, there could be very little said clearly and pertinently concerning knowledge: . . . . at least *they interpose themselves so much between our understandings and the truth, that their obscurity and disorder do not seldom cast a mist before our eyes, and impose upon our understandings.*"

In a late paper we quoted Lord Bacon precisely to the same effect, and we feel assured that between the commencement and the close of Locke's celebrated Essay, he had studied, and that diligently, the treatise on "The Advancement of Learning;" at least in the closing portion, on the "Conduct of the Understanding," there are proofs of this, amounting to plagiarism. A precisely similar passage to those already cited, occurs in Lord Shaftesbury's Miscellaneous Reflections. "Reigning words are many times of such force as to influence us considerably in our apprehensions of things."

The candid confession, however, of such a man as Locke, would be a sufficient justification for devoting a few more pages to the illustration of this subject, as it shows how recklessly words are likely to be adopted and bandied about by the multitude, when a severely accurate thinker was so long in discovering the force which they are calculated to exercise upon thought.

We have already endeavoured to show, in the instance of the word "morality," how the spirit of the time can set its stamp, marking a limited circle upon a subject-matter almost indefinite, and bringing all the feelings which have clustered and aggregated round a general term to bear at once with all the emphasis of indignation upon a single species comprehended within it. We will take another instance of a different kind. "It pleased God by the foolishness of *preaching*," &c. (1 Cor. i. 21). Had the Nonconformists rested their arguments in favour of extemporaneous discourses on their novelty, interest, and semblance of immediate inspiration, it might not have been easy to invalidate these arguments as far as they go: but when they quoted the above text, the original and true meaning of the word "preaching" became a question; and it was found that its etymon "*prædico*," with the equivalent "*κηρύττω*," were not used with those limitations within which the Nonconformist party were anxious to confine the English word. "Sermons," says Hooker (Eccl. Polit. bk. v.), "are not the only preaching which doth save souls. For concerning the use and sense of this word, '*Preaching*,' which they shut up in so close a prison; . . . . because they insist so much, and so proudly insult thereon, we must a little inure their ears with hearing how others, whom they more regard, use in this case the self-same language with us whose manner of speech they deride."

He then quotes Justin Martyr, and other earlier authorities, to show the latitude with which the Greek and Latin words, rendered into English by "preaching," were used in the first ages of the Church. Thus the main prop of the Nonconformist argument was knocked away.

> "Pains and study were not much their care:
> Texts were explained by fasting and by prayer."

And most of those who cited the text in argument did so no doubt in honest ignorance; but some of them were sufficiently informed to be aware, that, when duly examined, it would not support them.

How often do we find philosophers tampering with valuable words in order to support a theory! In the various treatises on virtue, how many attempts have been made to limit its whole essence to a single quality, *thereby destroying the integrity of the word properly assigned to express that quality!* We might instance such theories to almost any extent, but many collections and confutations of them have already been given to the public; and we may direct our readers to the eighth chapter of Chalmers's Bridgewater Treatise as the most eloquent summary, and to the Lectures of Dr. Thomas Brown (lxxiv. to lxxxi. inclusive) as the best refutation of them.—We will give only one instance, for the sake of those who are not familiar with this class of subjects. In answer to Woolaston, who, in his "Religion of Nature Delineated," makes all virtue consist in acting in accordance with Truth, or what he calls the "true nature of things,"—"Who," says Dr. Brown, "but the author of such a system, could believe for a moment that parricide is a crime only for the same reason which would make it a crime for any one (and if the great principle of the system be just, a crime of exactly the same amount), to walk across the room on his hands and feet, because he would then be guilty of the practical untruth of using his hands, not as if they were hands, but as if they were feet; as, in parricide, he would be guilty of the practical untruth of treating a parent, not as if he were a parent, but a robber and murderer?"

Soame Jenyns is in many respects an admirable writer, but in his "Internal Evidences of the Christian Religion" we have a deliberate attempt to corrupt a word for the purpose of drawing a general conclusion. To prove the superior nature of Christianity, he attacks not only the vices of the Heathen, but *the very name of one of the virtues which they were supposed to possess*, striving to attach to the word "Patriotism," as a necessary part of its idea, all the evil which might be accidentally connected with it. He was incapable of Hooker's view, "that we contemn not all as unmeet the like whereunto have been either devised or used haply amongst Idolaters;" and because patriotism is not mentioned in Scripture, though its excellence may thence be fairly implied, he thus speaks of it:—

> "Christianity commands us to love all mankind; patriotism to oppress all other countries, to advance the imaginary prosperity of our own; Christianity enjoins us to imitate the universal benevolence of our Creator, who pours forth his blessings on every nation upon earth; patriotism to copy the mean partiality of an English parish officer, who thinks injustice and cruelty meritorious whenever they promote the interests of his own inconsiderable village."

Soame Jenyns has fortunately failed of making this view of patriotism general, in spite of his popularity: otherwise, a word, which still deservedly commands our respect, would have required, like many others, to be vindicated by reference to its etymology, in order to show that an attachment to our country, and a preference for it, do not fairly imply a contempt for, or neglect of our race.

The words, "sceptic," and "apostate" are lost beyond recovery. We do not know whether to attribute this to ignorance or bigotry; and we can only say, that according to the proper meaning of the latter term, any one is just as much an apostate who departs from a Heathen, as he who withdraws from the Christian, religion. And here it may be observed, that bad company ruins language, and that the connection of a neutral word with the name of a bad man often, though most unjustly, injures the character of the word for ever. We are milder in the use of the term "proselyte," though a man is only properly called a proselyte with reference to the religion to which he advances, whatever it may be, as he is called an apostate with reference to that from which he recedes: but the disposition of mankind is to appropriate everything, and we are prone to view every movement as to or from ourselves. A sceptic truly signifies a person in the attitude of survey, before he fixes on what he considers to be truth; a position in which every thinking man has probably found himself at one time or other.

Truly the history of language, and we fear of our own pre-eminently, would form a mournful comment on human uncharitableness. "Saint" means merely holy, and the vast ellipses which malignity supplies are as follows:—"Saint," one who pretends to be more—holy—than he is; or who claims to be accounted more—holy—than others; or who *is* more—holy—than we choose to approve of.

Even decided partizans have occasionally had the sense to see the absurdity of party words. Owen Feltham, an earnest Cavalier, says, in his "Resolves," of the term Puritan:

> "It imports a kind of excellency above another; which man being conscious of his own frail bendings, is ashamed to assume to himself, so that I believe that there are men that would be Puritans, but indeed, not any that are."

SPECIMENS OF PARSING AND PARAPHRASING.

NO. XVI.

A PARAPHRASE is more or less an expansion of the original, and may be written either in verse or in prose. The following verses by Addison are a paraphrase of part of the 19th Psalm, and are here given, with specimens of explanatory transposition in prose, which has been hitherto the nature of the paraphrasing which we have exemplified in the Journal. It may be observed that Addison has described the heavenly bodies according to appearance, or the astronomy of the eye, not according to the strict reality of science, and that he has introduced an allusion to the Pythagorean doctrine of the music of the spheres. Several of our poets have made similar allusions. Thus Campbell describes Herschel's discovery of the Georgium Sidus as contributing to "the lyre of heaven another string;" and the same poet, referring to the 14th verse of the 1st chapter of Genesis, says, that at the creation

"Spheres sublime
Pealed their first notes to sound the march of time."

So Milton speaks of the

> " Five other wandering fires, that move
> In mystic dance not without song."

And Shakspeare makes Lorenzo say to Jessica,

> " There's not the smallest orb which thou behold'st,
> But in his motion like an angel sings."

The paraphrastic character of Addison's Ode on Creation, should be ascertained by comparison with the first four verses of the Psalm.

> " The spacious firmament *on high,*
> With all the blue ethereal sky,
> And spangled *heavens*—a shining *frame*—
> Their great Original proclaim.
> The unwearied Sun, from day to day,
> *Does* his Creator's power *display,*
> And publishes to every land
> The work of an Almighty hand.
>
> *Soon as* the evening shades prevail,
> The Moon takes up the wondrous tale,
> And, nightly, to the listening earth
> Repeats the story of her birth;
> *While* all the Stars *that* round her burn,
> And all the Planets, in their turn,
> Confirm the tidings as they roll,
> And spread the truth from pole to pole.
>
> *What,* though in solemn silence all
> Move round this dark terrestrial ball!
> What though no real voice nor sound
> Amid their radiant orbs *be* found!
> In Reason's ear they all rejoice,
> And utter forth a glorious voice;
> For *ever singing,* as they shine,
> 'The Hand that made us is Divine.' "

Parse the words printed in italics; explain, etymologically, the words Firmament, Sky, Heavens, Prevail, Pole, Utter, Ever; and write a paraphrase in prose.

PARSING.

On high, adverbial expression, consisting of the preposition *on* governing the implied noun *position,* and the adjective *high* qualifying *position.* It may be more correct to assign to the preposition phrase *on high* an adjective character, and to say that it qualifies *firmament.*

Heavens, noun, nomin. plur., uniting with *firmament* as the plural nominative to the verb *proclaim.*

Frame, noun, nomin. in apposition with *heavens.*

Does display, the emphatic form of the present tense, here used unemphatically, and liable to that censure of Pope—

> " While *feeble expletives* their aid *do* join."

Soon, adv. modifying *takes.*

As, conjunct. connecting, "The moon takes up, &c." and "The shades prevail."

While, conjunctive adv., connecting the two verses, and modifying *takes* and *repeats* in the one verse, and *confirm* and *spread* in the other.

That, relat. pron., nomin. to *burn.*

What, an interjection; an abridgment of the phrase "What does it signify?"

Be, neut, verb, present indic., third pers. sing., in concord with its nomin. *voice* or *sound*; auxiliary to the passive participle *found.*

Ever, adv. used as a noun, gov. by *for.*

Singing, imperf. partic., adjectively describing *they.*

ETYMOLOGICAL EXPLANATION.

Firmament, from the Latin *firmare*, to strengthen; the ancients having supposed it to be a strong solid canopy.

Sky, from the Greek *skia*, a shadow, the region of clouds which shade the firmament.

Heavens, Saxon, that which is *heaved* or *heaven up*; called also in Scotch *the lift.*

Prevail, from the Latin *prevalere*, to be more strong.

Pole, the turning point, from the Greek *polea*, I turn.

Utter, Saxon, from the comparative of *out*; to give out.

Ever, Saxon, a contraction of *every*; for every or all time.

PARAPHRASE:—FORM NO. I.

Adapted to the capacities of younger pupils.

The vast firmament that is above all, with the blue ethereal substance forming the sky beneath the firmament, and the heavens, as seen at night, a shining frame all spangled with stars, declare their great First Cause. The sun, unwearied by his ceaseless course, does from day to day show how strong his Creator must be, and makes known to every part of the globe that he is the work of an Almighty hand. As soon as the darkness of evening gets possession of the sky, the moon continues the same wonderful story, and from night to night repeats the account of her creation to the quiet, listening earth; while all the stars that shine around her, and all the planets in the order of their appearance, give testimony of the same kind, as they roll through space, and extend the knowledge of the truth all round the world.

What, though all the heavenly bodies move in solemn silence round this dark earthly globe! What, though no real language, nor sound of any kind, is to be found among their shining spheres! the ear of the mind, by imagination, can hear them rejoicing, and uttering forth a noble language, singing for ever while they shine, "It is a Divine Hand that hath made us."

PARAPHRASE:—FORM NO. II.

Adapted to the capacities of older pupils.

The lofty and far-stretching firmament, with its azure sky extending beneath it, and the shining frame of the star-spangled heavens, both bespeak the greatness of their Divine Original. The sun, pursuing his course day after day with unabated strength, thereby manifests conspicuously the power of his Creator, and proclaims himself to every region of the globe as a work that must have proceeded from an Almighty hand. And as he travels beyond our view, and the shades of evening advance to occupy the sky, the moon then continues the proclamation of God's wonderful works, and repeats every night to the listening ear of the silent earth the account of her creation; while all the stars shining brilliantly around her, and all the planets as they successively appear, confirm the intelligence as they pass over the heavens, and spread the truth all round the world.

For what does it matter, though the sun, moon, and stars all move in solemn silence round this dark globe! What, though in reality no speech nor sound is heard amidst their radiant spheres! In the ear of reason they are heard uttering the voice of joy and adoration, perpetually singing as they shine, " A Divine Hand hath made us all."

J. H.

Correspondence.

SCHOOL BOOKS.

Rev. Sir,—Having heard it mentioned by schoolmasters, that it would afford them great assistance, as well as save them in the end, much unnecessary expence, if a select list of the most useful books, suitable for them in their profession, could be given, I have ventured to give the enclosed list, being acquainted with and much indebted to most of them; perhaps you will, if you think it advisable, insert it in your excellent journal, to which many schoolmasters are subscribers. At the same time, soliciting your kind assistance in adding or substituting any other work which may appear to you more suitable,

I remain, reverend sir, your obedient humble servant,
Nov. 13*th*, 1850. A VILLAGE SCHOOLMASTER.

P. S.—The Christian Knowledge Society's Books are marked thus, S. P. C. K., and the prices charged to the *public*, much cheaper to subscribers.

List of Books suitable for a Schoolmaster.

Holy Bible, with references.
Book of Common Prayer.
Mant's Notes to the Bible, S. P. C. K. 20*s*.
Holden's Expositor of the Old and New Testament, Rivingtons, 25*s*.
Townsend's Arrangement of the New Testament, Rivingtons, 6*s*.
Horne's Introduction to the Study of the Bible, Longman, 9*s*.
Nicholl's Help to the Reading of the Bible, S. P. C. K. 2*s*. 8*d*.
Outlines of Sacred History, S. P. C. K. 3*s*. 6*d*.
Cruden's Concordance, condensed by King, Griffin, 5*s*.
Gastrell's Christian Institutes, S. P. C. K. 2*s*. 4*d*.
McLeod's Geography of Palestine, Longman, 1*s*. 6*d*.
Handbook of Bible Geography, S. P. C. K. 2*s*.
Berens' History of the Book of Common Prayer, Parker, 2*s*. 6*d*.

Wheatley's Illustration of ditto, Tegg, 4*s.* 6*d.*
Liturgy Compared with the Bible, S. P. C. K. 5*s.*
James on the Collects, S. P. C. K. 2*s.* 8*d.*
Trower on the Epistles, S. P. C. K. 3*s.*
———— Gospels, S. P. C. K. 2*s.*

On the Church Catechism.

Arden's Manual of Catechetical Instruction, Masters, 2*s.* 6*d.*
Bather's Hints on the Art of Catechising, Rivingtons, 4*s.* 6*d.*
Beveridge's Exposition, S. P. C. K. 1*s.*
Chanter's Help to an Exposition of Masters, 6*d.*
Halton's Historical and Practical Exposition, Masters, 4*s.*
Ken's Practice of Divine Love, Parker, 9*d.*
Nicholson's Exposition, S. P. C. K. 1*s.* 6*d.*
Oxford Catechism, S. P. C. K. 6*d.*
Ramsay's Catechism, Rivingtons, 2*s.*
Secker's Lectures, S. P. C. K. 2*s.* 9*d.*
Sinclair's Illustrations, S. P. C. K. 8*d.*
Wake's Commentary, S. P. C. K. 1*s.* 11*d.*
Pearson on the Creed, edited by Chevallier, Parker, 12*s.*
Beveridge on the Thirty-nine Articles, Rivingtons, 8*s.*
Bickersteth on ditto, Rivingtons, 4*s.*
Hammond's Practical Catechism, Parker, 10*s.* 6*d.*
Bates's Ecclesiastical History, Parker, 6*s.* 6*d.*
Palmer's Compendium, Hughes, 4*s.* 6*d.*
Hooker's Ecclesiastical Polity, Clarendon Press, 11*s.*
Hook's Church Dictionary, Rivingtons, 10*s.*
Jones's Doctrine of the Trinity, S. P. C. K. 1*s.* 6*d.*
Porteus's Summary of the Evidences of Christianity, S. P. C. K. 3*d.*
Wordsworth's Theophilus Anglicanus, Rivingtons, 8*s.* 6*d.*
Pridden's Early Christians, Parker, 4*s.*
The Whole Duty of Man, S. P. C. K. 2*s.* 9*d.*
Taylor's Holy Living and Dying, Parker, 4*s.*
Nelson's Fasts and Festivals of the Church, S. P. C. K. 3*s.* 7*d.*
Spinckes's Church of England Man's Companion, Parker, 1*s.* 6*d.*
Landford's Vox Cordis, or Prayers for the Closet, Parker, 2*s.* 6*d.*
Eucharistica, Suttaby, 2*s.* 6*d.*
The Imitation of Christ, Parker, 1*s.*
Scougal's Life of God in the Soul of Man, S. P. C. K. 11*d.*
Phipps's Catechism on the Holy Scriptures, Masters, 1*s.*
Questions and Answers of the plainest kind on the New Testament History, by A. S. M., Bell, 4*d.*

Arithmetic.

Hunter's Text-book, Longman, 5*s.*
———— Manual, Rivingtons, 9*d.*
Hughes's Explanatory, Longman, 1*s.*
Tate's First Principles, Longman, 1*s.* 6*d.*

Astronomy.

Herschel's, Longman, 6*s.* or,
Reid's Elements of, Simpkin, 2*s.* 6*d.*

Geography.

Cornwall's School Geography, Simpkin, 3*s.* 6*d.*
Sullivan's Geopraphy Generalized, Longman, 2*s.*
Hughes's Physical Geography, Longman, 3*s.* 6*d.*

Grammar, &c.

Latham's, Taylor and Walton, 4s. 6d.
Hunter's, Longman, 2s. 6d.
Bromby's, Simpkin, 2s. 6d.
Hunter's Parsing Exercises, Longman, 9d.
Walker's Dictionary, edited by Smart, Longman; or Reid's Dictionary, Simpkin, 6s. 6d.

History.

The School History of England, Parker, 6s.
Goldsmith's, by Taylor, Whittaker, 6s.
Hughes's Atlas, published by Blackie, sold by S. P. C. K. 10s. 6d.
——— Hand Atlas for Bible Readers, Varty, 2s. 6d.

PHONETIC SPELLING.

SIR,—The world is full of what Butler in his "Hudibras" calls

"The new-found old inventions,"

and of these the phonetic, or more properly, fonetik, system of spelling seems to be one.

The works in which this plan was adopted appear to have perished, as might have been expected, but that there were such, we have the following evidence of Dr. Swift, in his "Letter to the Lord High Treasurer."

"Another cause which has contributed not a little to the maiming of our language, is a foolish opinion advanced of late years, that we ought to spell exactly as we speak, which, beside the obvious inconvenience of utterly destroying our etymology, would be a thing we should never see an end of. Not only the several towns and counties of England have a different way of pronouncing, but even here in London they clip their words after one manner about the court, another in the city, and in a few years it is probable will all differ from themselves as fancy or fashion shall direct, all which reduced to writing would entirely confound orthography. Yet many people are so fond of this conceit, that it is sometimes a difficult matter to read modern books and pamphlets; where the words are so curtailed and varied from their original spelling, that whoever has been used to plain English will hardly know them by sight."

I have given the entire passage as a warning to the advocates of the system, of what, on the whole, they are to expect, and to discourage what appears exceedingly senseless. It is evident that two modes of dealing with the same language—an esoteric and an exoteric—are far less likely to flourish together at the present time than they would have been when the above passage was written; the wider spread of education, together with the greatly diminished price of good books, have generated an immense number of readers, and intelligent readers, among the lower orders, who, if trained only on the phonetic mode, would be excluded from all the advantages which cheap publication is calculated to afford them, unless the phonetic press could keep pace with the ordinary one, and this could not be expected, for, be it observed that the old books which once formed the furniture of our cottages, and which might perhaps have been phonetically stereotyped, are not those which the intelligent mechanic of the present day has any appetite for. Think, too, of the mutual difficulties in deciphering correspondence which would occur in the case of a youth educated at one of our national schools and his "luvving and affekshunat" phonetic "brutther." A still greater evil would be the bastard kind of language which a reciprocal accommodation of the mixed styles must infallibly produce. I leave out higher considerations, and

Remain, Mr. Editor, your obedient servant,

A. M. OXON.

P.S. Let me add one argument which may be commended to the minds of some by experience in parallel cases. There is something very degrading in this phonetic system. Let the poor man once understand that it is offered to him, as an inferior article, would he not treat it as he would the coarsest brown bread if it were doled out in charity to his corporal necessities?

SLATE DESKS.

Sir,—"A Battersea Master" asks the opinions of his brethren as to the good likely to result from fixing the slates used in schools upon the parallel desks.

After a careful investigation of the subject it appears to me that many and great evils would spring from the adoption of such a scheme in our schools. I will instance a few as they occur to me.

1st. It would multiply the work of the master; for instead of keeping his proper position, in front of his boys, he would be obliged to be constantly moving in and out of the desks to ascertain the work of his class; a practice which I am convinced would be a fruitful source of many irregularities.

2nd. It would deprive the children of all benefits derivable from tasks, or, as they are called here, "night work" done at home. I think this a great deprivation.

3rd. It is calculated to destroy a feeling which ought to be encouraged,—that feeling of honest pride which every one should take in his own property; such a feeling as would engender carefulness, and lay the foundation of thrifty habits.

4th. It strikes me that, in winter, slate is not the most comfortable material to write upon. I mean that, when writing on copy books, children (and adults too) would find their fingers grow so benumbed that writing would be out of the question. Now, supposing all the desks to be covered with slate, this must be the case, for parallel desks if useful at all, must be so for writing upon.

5th. I cannot but think that much disturbance and unpleasantness would arise from that continual change of place which I find to be constantly going on in any school. I cannot keep up attention in my school by stifling that spirit of restless activity which (for wise purposes) is given so abundantly to the young. On this account it is that it is so necessary in dealing with children to take advantage of natural laws, and graft upon them systems of emulation; and among these I find the taking of places to be about the most useful.

6th. I find it very useful at times to cause the children to bring out their slates (perhaps after a dictation lesson on geography) to pursue the lesson in a standing position, if for no other purpose for a change of posture.

7th, and last that I can think of at the present moment.—Her Majesty's inspector would at his next visitation, most likely, find out the value of all the foregoing objections, and to these add his decided conviction that something must be done to prevent the repetition of the annoyance of the having to experience the "pursuit of knowledge under difficulties," and with such imminent risk of coming out of such an ordeal like the beggar in the "House that Jack built," "all tattered and torn."

I am, sir, yours truly,
A BATTERSEA MASTER.

SIR,—Two years ago we had our slates fastened to the desks in the manner recommended by "A Battersea Master" in your last journal; but found stooping to examine whatever was on them so inconvenient and injurious, that we have had recourse to our old slates again.

I am quite sure your intelligent correspondent has never tried it on a large scale. He has only to examine the writing or ciphering lessons of a hundred boys—and we have more than that to examine sometimes—to be convinced it is a most objectionable arrangement.

I would recommend, instead, that a drawer or shelf be placed under the desk, for each boy to put whatever he requires, and a peg for his cap.

The inkwells should be covered with a sliding panel running the whole length of the desk. This would exclude dust, and prevent the young gentlemen embellishing slate or desk with pencils dipped in ink.

A BRISTOL MASTER.

Notices of Books.

RHETORICAL READINGS FOR SCHOOLS. BY WM. M'DOWALL, INSPECTOR OF THE HERIOT'S FOUNDATION SCHOOLS, EDINBURGH.

EVERY three or four months some fresh collection of extracts is announced, and nearly every school in the kingdom might have its own "reader" or "reciter." The very common-place character of most of these books has prevented their admission into our better schools, and created a strong prejudice against them in the minds of the public schoolmasters. In our own young days we remember that decent English composition was expected in their themes and other exercises, from boys whose only models of English were such as their own casual reading offered them, and very casual indeed, and not very select, this reading was with the majority.

Our professional men, who are the most likely to require some of the graces of composition in after life, still for the most part come from schools which profess indeed to educate the taste, but which as far as a knowledge of English is concerned, sedulously steer between the alternatives of teaching it either by grammar or example; whilst boys who are trained at places of less pretension have often the advantage of both. Were it not for the practice of translating the classics into English, which certainly, when well conducted, proves more efficacious than any one *à priori* would anticipate, we really do not know how our public school boys would be able to write English at all. We shall probably take some future opportunity of treating this subject more at length.

The present work has the merit of not having been compiled from former compilations; the arrangement of the prose and verse is the same as that followed in "Boyes's English Repetitions," but the passages are longer—the descriptive ones, occasionally of one hundred lines each; they appear to have been collected by the editor chiefly in his perusal of modern works of interest, a perusal which must have been extensive, and they are in the main very well chosen.

We view, however, with jealousy, in an educational work, anything like a decided preference given to very recent authors. In the old English classics the legitimate varieties of style are more numerous, and more strongly marked than in the favourites of our own day, and we should be glad to see a partial return to their manner: they contain stores of general truth still unexhausted, and which we are often doomed to see only diluted by the moderns; and, "avia Pieridum loca," explored only by few. We except, of course, subjects on which there has been some great recent access of positive information; otherwise in a limited work we would rather see three or four extracts each from such writers as Bacon or Burke, than have our attention directed to Drs. Dick or Channing.

Besides, every art and aid should be used to make the young appreciate—a task at the best difficult enough—the beauty and the sense put before them; we want names full of high association, crowned with the praise of ages, names which the young are the most likely to have heard cited with deference.

We are supposing that the passages in the work before us are intended to be committed to memory, and not merely for practice in elocution. The author speaks indeed of "fine reading," in his preface, so this may, perhaps, be one principal object. With what is commonly and somewhat vulgarly called "fine reading," we have little sympathy. How often have we been led to exclaim, "Quam pulchra facies at cerebrum non habet," with the fox in the fable. Unmeaning tricks of intonation, and defective mumbling utterance should be corrected, and then let the voice and tone speak sincerely the individual mind. If there be emotion and discernment, they will show themselves in the proportion in which they are possessed and felt. St. Augustin said, that there were more passages in scripture that he did not, than that he did understand, and we know of few things more disgusting than the hypocrical glibness and the assumption of full intelligence with which we have heard actor-trained young clergymen careering through passages of the deepest mystery. Awake the feeling, and inform the sense; this is the true way to get eloquent and effective reading. Every man of genius, says Dr. Johnson, has some way of fixing the attention peculiar to himself, and with some most rare exceptions, a man of superior original intelligence will by his natural manner gain the sympathy of an intelligent audience; and let the reader thoroughly love and understand his author, and he can nearly afford to throw away comma and colon.

PROGRESSIVE EXERCISES IN THE CHURCH CATECHISM. BY THE REV. HENRY HOPWOOD, M. A., RECTOR OF BOTHAL, NORTHUMBERLAND, LATE DIOCESAN INSPECTOR OF SCHOOLS FOR THE NATIONAL SOCIETY.—PART I. PREVIOUS EXERCISES.—PART II. THE CHURCH CATECHISM,—WITH SHORT QUESTIONS AND ANSWERS.—PART III. ANALYTICAL EXERCISES. (London: *J. H. Parker*, 1849.)

THE title of these little catechisms well expresses their real character. They are progressive exercises upon the subject of which they treat; and on that account we would strongly recommend them, as well as for the simple manner in which the first part opens the way to the other two. The previous exercises in the first part are very short, but quite long enough for single lessons for a class of little children, especially when illustrated by oral instruction. It is scarcely possible to impress too deeply upon the minds of teachers the advantage of teaching only a little, but that thoroughly, at one time. The second part is also short, and the subdivisions carefully marked. It somewhat resembles the well-known broken Catechism of the Christian Knowledge Society, but it is a decided improvement upon it. The analytical exercises in the third part are intended to suggest questions to the catechist, who, to use them effectively, must first carefully go over them in private. If so used, they can hardly fail of improving both the teacher and the scholar.

EUCLID'S ELEMENTS OF GEOMETRY, THE FIRST SIX BOOKS CHIEFLY FROM THE TEXT OF DR. SIMSON, WITH EXPLANATORY NOTES; A SERIES OF QUESTIONS ON EACH BOOK; AND A SELECTION OF GEOMETRICAL EXERCISES FROM THE SENATE-HOUSE AND COLLEGE EXAMINATION PAPERS; WITH HINTS, &c.: DESIGNED FOR THE USE OF THE JUNIOR CLASSES IN PUBLIC AND PRIVATE SCHOOLS. BY ROBERT POTTS, M.A., TRINITY COLLEGE. (London: *National Society's Depository.*)

A VERY useful volume, the title of which explains its contents.

ANSWERS TO THE MATHEMATICAL QUESTIONS.

QUES. 81.—*Proposed by Mr. Salter, Durham.*

THE base of a right-angled triangle is 3 feet, and the perpendicular height 4 feet; it is required to divide the triangle into three equal parts by lines drawn parallel to the perpendicular.

Answered by Mr. Brown, Mr. Herbert, Woolton, and
Emma Royds, Hollingworth.

Let x = the distance of the first perpendicular measured from the acute angle of the triangle; then as the areas of similar triangles are to each other as the squares of their like sides, we have

$$\frac{3 \times 4}{2} : 3^2 :: \frac{3 \times 4}{2} \times \frac{1}{3} : x^2,$$

$$\therefore\ x = 1{\cdot}732,$$

and the distance of the other perpendicular is in like manner found to be 2·449.

QUES. 82.—*Proposed by Theta, Earls Heaton.*

A frustum of a cone, the radii of whose greater and lesser ends are R and r respectively, and whose weight is W lbs., rests upon a horizontal plane with the lesser end downwards. What weight, suspended from a point in the circumference of the greater end, will just overturn it?

Answered by Mr. Salter, Mr. Hills, Mr. Hewitt, Mr. Levy,
Mr. Dyer, and Mr. Barnacle.

Let P = the weight which must be suspended, then by the equality of moments, we have

$$P \times (R - r) = W \times r,$$

$$\therefore\ P = \frac{W r}{R - r}.$$

QUES. 83.—*Proposed by Mr. J. Sheppard.*

The rate of interest in Savings' Banks is 2*l.* 18*s.* 4*d.* per cent. per annum. Monthly interest is allowed on deposits, and the interest is written up half-yearly and converted into principal. What sum per month must be deposited to accumulate to 120*l.* in 14 years?

Answered by Mr. O'Clazey, Durham.

Let a be the monthly deposit; r the rate per £ per month; then,

$a + ar$ = sum due at the end of 1st month.
$a + 2ar$ = ,, 2nd ,,
$a + 3ar$ = ,, 3rd ,,
$a + 4ar$ = ,, 4th ,,
$a + 5ar$ = ,, 5th ,,
$a + 6ar$ = ,, 6th ,,

and $6a + 21ar$, amount at the end of the first half-year

$$= a(6 + 21r) = a\left(6 + \tfrac{21 \times 7}{2880}\right) = \tfrac{5809}{960}a.$$

This money may be considered as an annuity, the amount of which in 28 half-years is £120; hence we find from the formula of annuities

$$£120 = \left(\frac{13012160 + 2561769}{76800}\right)a.$$

$$\text{or, } a = \frac{9216000}{15573929}\,£ = 11s.\ 10\tfrac{1}{4}d.\ \text{nearly,}$$

the monthly deposit.

LIST OF MATHEMATICAL ANSWERS.

J. Hewitt, Cambridge, ans. 81, 82, 83; A. M., Gillingham, ans. 81, 82, 83; J. Slater, Durham, ans. 81, 82, 83; Thomas Brown, ans. 81, 82, 83; W. Righton, ans. 81, 82, 83; H. Ford, Norham, ans. 81, 82; Nero, Berwick, ans. 81, 82; H Hill, Chester, ans. 81, 82, 83; S. Dyer, Wanstead, ans. 81, 82, 83; T. Sothern, Burton-wood, ans. 81, 83; Emma Royds, Hollingworth, ans. 81, 82, 83; John C., Ecclesall Nat. School, Sheffield, ans. 81, 82; J. O'Clazey, Durham, ans. 81, 82, 83; G. Barnacle, Empingham, ans. 81, 82; J. Herbert, Woolton, ans. 81, 82, 83.

NEW QUESTIONS,

To be answered in our Number for January, 1851.

Ques. 84.—*Proposed by J. H.*

Four labourers, A, B, C, and D, are engaged to dig a field containing 2 acres, 3 roods, 4 perches, 9 sq. yards. A digs 200 yards the first day, 205 the second, 210 the third, and so on; B digs 220 yards the first day, 216 the second, 212 the third, &c.; C digs 180 yards the first day, 186 the second, 192 the third, &c.; and D digs 225 yards the first day, 220 the second, 215 the third, &c. How many days will the work occupy them?

Ques. 85.—*Proposed by the Editor.*

Give a geometrical construction of the problem contained in question 81.

Ques. 86.—*Proposed by John C., Ecclesall School, Sheffield.*

Find the value of x in the following equation:—

$$8^x + \frac{1}{8^x} = 4\tfrac{1}{4}.$$

REMARKS ON THE CHARACTER OF DR. MALKIN.

Contributed by James Spedding, Esq. to "A Retrospective Address read at the Tercentenary Commemoration of King Edward's School, Bury St. Edmund's, by J. W. Donaldson, D.D."

To this day, the Homeric Zeus has, in my imagination, many of the features, and all the voice, of Dr. Malkin. Nor was the impression made by these harangues the less effectual for being indirect. On such occasions, it was out of the abundance of his head that his mouth spoke. There was nothing of formality about him, no pedantry, or cant. You were sure he felt all he said. Thus the whole school became well acquainted with his tone of thought and feeling long before they came into personal contact with him, and their earliest aspirations received a direction acccordingly.

But to know the master's likes and dislikes would have been a small matter comparatively, if his judgment had not been, in the main, such as found an echo in the hearts of the boys themselves. Assuredly, it was with no servile faith that we listened. If we believed, it was because we saw reason to believe. His character had its singularities; and, as schoolboys are no indulgent critics, you may be sure that his proceedings did not escape censure. His opinions, his regulations, his awards, his tastes in composition, nay (*horrendum dictu*), his very scholarship was freely canvassed among us; and we were often unanimous in disapprobation,—not always, perhaps, without reason. But this was only the reasonable liberty of the subject; for we were loyal subjects not the less, and looked up to our king with affection duly tempered by respect. The respect, indeed, was inevitable and universal: the strength of his will, the majesty of his demeanour and voice, and the magnificence of all his ways, commanded it. The affection (which was also very general, especially among the better sort of boys,) was due to a rarer quality—I mean, the *cordiality* of his character, his thorough sympathy with boy life, his undisguised interest in their pleasure and pursuits, and, above all, his unaffected respect for those qualities in boys which boys respect in each other. When such feelings in a master are genuine, they soon become known, and very little intercourse or interference out of school is needed to maintain their influence. To secure his hold upon the boys' feelings, Dr. Malkin had no occasion to make himself either their playfellow or overlooker. The presence of his own sons among us did something towards it, for they were all made to be loved, and his sympathy flowed through them to us all. But, even without them, we should have had assurance enough of it. His sympathy declared itself, as his authority maintained itself, by its own nature. He had a real respect for a manly boy. He had real pleasure in seeing a happy boy. He took an earnest and affectionate interest in the progress of a boy who showed a disposition to think for himself. All this appeared by casual indications and in little things, but, being true and unaffected, a little evidence was enough. In short, we knew it was so, and the knowledge had its natural effect. It made us anxious for his approbation, and afraid of his displeasure—not on account of rewards or punishments to follow, but because the one was a gratification, and the other a mortification, in itself.

Of this feeling, one happy consequence was that little supervision was needed out of school: very little, at least, was used. It was out of school that all the lessons and exercises were prepared, and these were expected to be ready at the time appointed; but beyond this, he did not inquire into the manner in which the boys occupied themselves in their studies or in the playground. He had no wish to see them chained to their desks all their divine youth, or turned into hacks before their time. The work exacted was, in general, moderate, though those who were studiously inclined, and took an interest in it, could find plenty to do; and when his portly figure and handsome rosy face appeared at the window of his library that looked into the play-ground, we knew that he came there—not to see who was working and who was idle, but to enjoy the sight of boys enjoying themselves. As in their studies and amusements, so also in their quarrels, he forbore to interfere. He knew that boys would quarrel, and that nature had provided them with suitable weapons for the settlement of angry difference. A fair fight in hot blood was never interrupted except by the school-bell. It was only when he heard that a fight which had been so interrupted was to be renewed after school, and proceeded with in cold blood, that he interposed a peremptory prohibition. He made us a speech; we stood rebuked; and the thing, I believe, was never done or thought of again. Upon the same principle, he allowed the summary administration of justice, which prevails among schoolboys, to take its course: only fagging, and everything that savoured of the authorized subjugation of the little by the big, he absolutely forbade. I well remember a public declaration which he made on this subject, on the trivial occasion of one boy making another clean his shoes; and his appeal, like all his public appeals of that nature, was quite effectual. No admonition addressed to the school at large, upon a point of order or morals, had to be repeated in my time. For preventing the oppression of the weak by the strong, and the growth of the many abuses to which such communities are liable, he trusted to the natural sense of honour and justice, which formed the public opinion of the school—trusted it largely and frankly; and, I will say, that the trust was not misplaced. It is true that, not being a boarder, I could not know all. But my most intimate companions were in Dr. Malkin's house; I spent a great deal of my time with them; and I do not think that any considerable abuses or oppression could have been practised without my hearing of it. Boys there were, no doubt, of low and vicious habits, who abused the general liberty of the place, and were enabled to go further wrong than they could have done under a stricter and more suspicious superintendence. But the bad were not the many, and I am persuaded that all the rest were the better for that liberty; less irregular in their conduct, and far more honourable in their principles, than they would have been without it. Every one who has been either at school or at college must have seen that *honour*, in England, is considered binding upon boys and men so long only as they are trusted; that as soon as the authorities set themselves to make the breach of regulations impossible, the attempt to break them, though it may be difficult or hazardous, ceases to be held dishonourable; and that a boy (or, indeed, a man) who feels that he is not trusted, will rarely care to deserve trust. Hence the multiplication of outward restraints, though it may possibly limit, while it lasts, the opportunities which bad boys have to do ill, carries with it this great evil,—it supersedes the exercise of moral restraint, and so demoralizes the good boys. Such at least, was Dr. Malkin's opinion; and I have heard him publicly allege it as his reason for not putting spikes on his gates and glass bottles on the walls: at the same time, publicly appealing to the steadiest boy in the school, whether, if that were done, he would not immediately try to get over. For the maintenance of order and discipline, a few broad and simple regulations were insisted on, the reasonableness and necessity of which the boys themselves could easily understand. These he expected them to obey; and, in the absence of proof to the contrary, presumed, as a matter of course, that they did obey. There was no suspicion, no watching, no caging in, no multiplication of small probibitions, by way of security. He trusted the boys, and expected, in return, that they would not abuse his confidence.

Much, I dare say, may be urged against this system; and in other places, and with other masters, I can even believe it has been fairly tried with ill success. All I can say is, that at Bury, under Dr. Malkin, it succeeded well. The prevailing sentiment of the school was just, generous, and honourable. The boys most generally liked were, so far as I can recollect, the boys of best character. Whether bad boys grew worse, I do not know ,but I do not believe that any well-disposed boy was corrupted there. And I dwell the more upon this main and conspicuous feature of his administration, because it is certain that what government there was in the school at that time was a *moral* government, and that in this liberality and generosity of dealing lay the only secret of the moral influence which upheld it. When I remember what severe trials our loyalty was sometimes put to, (severe according to our then estimate of human evil,) and how well it stood the test, I cannot doubt that this influence was really very strong. Instances of such childish grievances hardly bear to be formally set down, but I will give one or two; and, trifles as they may seem now, I am sure there are many of my contemporaries who will remember the days when "these things were great to little boys."

I have said that our work, generally speaking, was light enough. But Dr. Malkin had a way of setting lessons and exercises according to some predetermined inflexible rule, which occasionally entailed a very severe pressure of work. The rule, for instance, might be that each lesson should consist of a single section in a variorum edition, and that all the notes should be construed. This, in nine sections out of ten, was light work enough; but in the tenth occurred some unhappy word upon which all the commentators had exhausted all their learning. On such occasions, I have known the morning school prolonged far into the afternoon; the sixth form have seen all the rest disperse, leaving the benches empty, and re-assemble again, having dined between, while they were still occupied in galloping at full speed through that interminable wilderness of commentation; and all for no reason whatever, except that that arbitrary rule might not be violated. In such cases, I suppose no earthly inconvenience would have induced that inexorable will to deviate a hair's-breadth from the predetermined plan. At other times the same inscrutable and inevitable destiny would require an enormous quantity of translation, Greek into English, or English into Greek (once it was an entire book of Herodotus), in a preposterously short time; which could only be accomplished by such incessant labour, while it lasted, that I remember to this day, as a distinct sensation, the weariness of the flesh and the drying up of the spirit which it brought upon me. And the misery was that, far from seeing the reason and necessity of all this, we were fully convinced that there was no reason for it at all; that it was the result of a whim merely. The section might just as well have been divided into two, or three, or four, or half, or two-thirds, or all the notes might have been omitted; and we should have been the wiser in consequence, rather than the less wise. All such grievances we bore, if not without a murmur, yet with a kind of amused resignation, which is wonderful to me when I look back upon it. We saw that he always took his own full share of the trouble and inconvenience in which these fancies involved him; and we took it as a part of the order of things. It did not perceptibly abate either our esteem for him, or our confidence in his sympathy for us; and this is the circumstance which makes the case worth mentioning.

For a like reason I may mention another and a graver defect; I mean his partiality. It cannot be denied that when he liked a boy he favoured him. I do not mean that he was deliberately or consciously unjust, or that his partiality had any unworthy motive. Very far from it. But his good opinion of the person, which was always very well founded, inclined him to think well of all he did, to dwell more upon the promise of good and less upon the actual shortcoming. The difference of the measure which he dealt in this way to different boys was obvious and sometimes almost laughable; and was certainly a grave defect, injurious in some degree to all, though most injurious to those who were most favoured. An examiner from Cambridge would have made some confusion among our prizemen and classes, and given many of us a seasonable and salutary warning. But while I admit this as a defect in the schoolmaster, I must add, to the honour of the man, that it was our scholarship only which was injured by it. Too much encouragement may have relaxed our exertions, but it never tended to impair our character. A prize or a high place in the form might be no sure indication of a good exercise or good scholarship; but Dr. Malkin's good opinion of the boy, which led him to make the award, was a very sure indication of substantial worth. I remember many boys in my time noted as "favourites." They are now scattered about the world, pursuing their different callings, some in distinction, some in obscurity; but wherever they are, I will undertake to say that they are respected by those who know them. It is a strong proof of the justice of the judgment upon which his partialities were founded, that no boy was ever liked the less by his schoolfellows for being a favourite with him. One boy suffered some persecution for too much addiction to private study in general, as well as a personal assault for the distinct offence of "knowing the *ologies*," but I do not remember one who suffered anything for being a favourite with the doctor, even when the favour led, as I still think it often did, to injustice in the award of prizes and arrangement of classes. It must be admitted, likewise, that he had corresponding distastes, which led him into unfairnesses the other way; and, sometimes, though very rarely, into unaccountable and (as we thought) unjustifiable severities. These were the severest shocks which our loyalty had to stand; and I have once or twice felt sensations, though never on my own account, which, if often repeated, would have gone far to estrange me. But such cases were so rare, and so little in keeping with the rest, that we were content to suppose that there was something in the matter more than we knew, and to forget what it was painful and perplexing to remember.

After what I have said of his habitual respect and generous confidence towards the boys, I need hardly add that he never doubted a boy's word; the inevitable consequence of which was that no boy with a spark of honour in him would ever tell a lie; or if he did it once from fear, he could never do it again for shame.

In his private intercourse, proceeding upon the same principles,—or, I should rather say, following the same instinct—he laid the schoolmaster aside, and treated the boys like guests and gentlemen. And, though he was naturally a reserved and silent man, with no great faculty for entertaining a party with conversation, yet he listened to our young observations and eager interests with so much unaffected pleasure and benevolence, that to "dine with the doctor" was always a great privilege; and I have no doubt that those elegant and illustrious little dinners still survive in many minds, as in my own, a pleasant and pathetic recollection. Nor will the picture of the doctor in his social aspect be thought complete by my contemporaries, without some remembrance of that supper to which the whole sixth form were annually invited, when the speeches were read out, and the parts assigned; or of the splendours of the speech-day itself, which, if Bury had produced a poet, would not have been left uncelebrated; or of the little parties which he sometimes took with him to the play; or of the great night of the school "bespeak." Such remembrances may be below the dignity of the subject; but they are not the less a part of the past, which was father of the present.

Intelligence.

UNIVERSITY COMMISSION.

Downing Street, Nov. 18, 1850.

SIR,—Her Majesty's Commissioners for the University of Oxford being charged with the duty of reporting to her Majesty on the state, discipline, studies, and revenues of the University and Colleges of Oxford, and required also to report their opinions on the subjects referred to them, are anxious to obtain information and suggestions from persons who, by their station and experience, merit public confidence. They therefore request that you will communicate to them whatever, in your judgment, may assist them in the formation of their opinions, and enable them to give a faithful representation of the present condition of the University. While they will be glad to receive from you any communication bearing on the subjects of their inquiry, they beg leave to call your attention specially to the following points:—

1. The possibility of diminishing the ordinary expenses of a University education, and of restraining extravagant habits.

2. The sufficiency of the powers which the authorities possess to enforce discipline.

3. The power of the University to make, repeal, or alter statutes.

4. The mode of appointing the Vice-Chancellor and Proctors.

5. The Government of the University and its relation to the colleges, as finally established by the statutes of Archbishop Laud.

6. The means of extending the benefits of the University to a larger number of students.

(1.) By the establishment of new halls, whether as independent societies, or in connection with colleges;

(2.) By permitting undergraduates to lodge in private houses more generally than at present;

(3.) By allowing students to become members of the University, and to be educated in Oxford under due superintendence, but without subjecting them to the expenses incident to connection with a college or hall;

(4.) By admitting persons to professorial lectures, and authorizing the professors to grant certificates of attendance, without requiring any further connection with the University.

7. The expediency of an examination previous to matriculation; of diminishing the length of time required for the first degree; of rendering the higher degrees real tests of merit; of so regulating the studies of the University as to render them at some period of the course more directly subservient to the future pursuits of the student.

8. The expediency of combining the professorial with the tutorial system; of rendering the professorial foundations more available for the instruction of undergraduates generally; of increasing the number and endowments of professorships; of providing retiring pensions for professors.

9. The most eligible mode of appointing professors; and the effect of existing limitations or disqualifications upon the appointment of professors.

10. The effect of the existing limitations in the election to fellowships, and in their tenure.

11. The propriety of abolishing the distinctions between compounders and ordinary graduates; between noblemen, gentleman-commoners, and other students; and also the distinctions made with respect to parentage at matriculation.

12. The means of fully qualifying students, in Oxford itself, for holy orders, and of obviating the necessity of seeking theological instruction in other places.

13. The capability of colleges and

halls, as at present constituted, to furnish adequate instruction in the subjects now studied, and in those introduced by the recent Examination Statute.

14. The system of private tuition, and its effect both on tutors and pupils.

15. The means of rendering Bodley's Library more generally useful than at present.

16. The propriety of laying periodical statements of the University accounts before convocation.

Her Majesty's Commissioners also request you ———— to furnish statements under the subjoined heads, and to give them any further information or any suggestions, which may occur to you, in relation to your office:—

1. The nature and endowment, and its present annual value; and whether any other sources of income are attached to it.

2. Whether any special qualifications are required by statute in the persons appointed.

3. Whether any residence, lecture-room, library, apparatus, collections, &c., are provided for you; if so, whether there are any funds for keeping them up.

4. Whether there are any statutes requiring the performance of specific duties; and whether those duties are such as could not profitably be now enforced.

5. The mode of appointment to your office; whether it is held for life, or for a term of years, and whether the person holding it is removable.

6. The nature and number of lectures usually delivered in each year; the average number of pupils attending, and the fee paid by each pupil.

7. The general condition in the University of the branch of study to which your professorship relates, and the means of promoting its advancement.

Her Majesty's Commissioners will be happy to receive your evidence, either orally or in writing, and in such a form as you may think best adapted to do justice to your suggestions and arguments. I have the honour to be, your obedient humble servant,

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A. P. Stanley, Secretary.

Perth Ragged School Farm.—This institution, which owes its existence to a grant of 500*l.* by the Committee of the Perthshire Destitution Fund, has now been in full operation for upwards of two months. Immediately on obtaining the grant, a piece of ground was procured at Craigie, fitted for the purpose, and the services of Mr. James Dow, a student in the Free Church Normal Seminary, Edinburgh, were secured as teacher. As, however, Mr. Dow could not come till the 1st of August, Mr. Maibey, the secretary to the school, who has had considerable experience in the management of this class of children, agreed to take charge of it until that time. The institution was accordingly opened by him on the 29th day of May last, with fifteen boys, all of whom were in a very destitute condition. Their ages varied from eight to sixteen. One of them had been an unfriended orphan since early youth; five had only one parent alive, two of them being deserted by their remaining parent. In every case the parents were drunkards. Two of the boys had no home but the streets; and all of them had been beggars, golf-club boys, or common pickers and stealers. Their conduct was what might have been expected in these circumstances. Seven of them had already found their way to the gaol or the police office ("the office," as they call it), and all of them were graduating for the hulks. Within a fortnight after the opening of the school, five of them were concerned in a joint act of theft. They all swore, they all lied, they all quarrelled; and, following the excellent example of our young gentlemen, they almost all smoked. It would be difficult to mention a vice to which they were all not more or less addicted. Before many weeks had passed away, however, a change of the most gratifying nature had taken place upon these boys; for, although their number was more than doubled, oaths, lies, and quarrels had become rare occurrences among them, and not a few had been repeatedly intrusted with small sums of money, of which they never failed to give a correct account. These moral results were accompanied by others of an equally gratifying description. At certain stated hours, when they had gone over their lessons, at which they are making good proficiency, they shoulder their spades and away to work. It was at first feared that their previous habits of idleness would have unfitted them for anything like steady industry; but this has been proved to be a mistake. They are, indeed, remarkably fond of working, and soon learn to use the spade or hoe to good purpose. Neither are they at all frightened at hard work, but willingly undertake any kind to which they are put. They have been employed, for example, in reclaiming a small piece of waste ground, which, owing to its great steepness, had to be formed into terraces before it could be cultivated. This was all done by the boys, and was performed in a very satisfactory manner; and thus green kail and Swedish turnip now occupy the place of docks and nettles. On the whole, it may with truth be asserted that, so far as it has hitherto gone, the experiment of a boys' farm has been eminently successful.—*Perth Advertiser*.

To Correspondents.

AMICUS is recommended to address a letter to the Reverend the Principal of the Training College, Battersea, before he takes any other step.

A NATIONAL SCHOOLMASTER, having four principal teachers, asks for a time-table for their instruction during the winter months: two are in their fourth year, and two in their second.

A. C.—There seems no other remedy for the case but dismissal.

A READER is referred to the article "On Teaching Latin" in our number for June, 1849. For a first reading book, Robson's First Latin Reading Lessons will be found useful.

T. T. B. is recommended to apply to the clergyman of his parish: he is the most likely person to afford advice and assistance to a deserving person.

J. A. M. asks some one to suggest better lights for an evening than candles, where gas cannot be obtained.

RENIKOLL.—There are few teachers who know enough about the Crude-form System of Teaching to be competent to give an opinion; we append the opinion of an able teacher, who has tried it and is by no means a partisan:—"Its principles no doubt are true, and as a mode of conveying a correct knowledge of language to boys, at a very early age, I believe it to be far superior to any other."

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